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Agenda Setting Effects in the Digital Age:

Uses and Effects of Online Media

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Uses and Effects of Online Media

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Agenda Setting Effects in the Digital Age:

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Lippmann argued the function of mass media was to bridge the world outside with the pictures in our heads (1922/1965). His idea has been floating the surface of real world and academic journalism throughout much of its history. Since Lippmann, many attempts have been made to understand, explain and theorize such communication phenomena (McQuail, 2000; Power et al., 2002; Severin & Tankard, 2001). Among those efforts, the agenda setting theory is believed to be one of the most important milestones in formalizing the mass communication process (DeFleur, 1998).

The current dissertation explores agenda setting effects in the digital age to determine whether the theory, which was built upon the conventional media environment, functions in the new media settings. Three sets of experiments examine four phases of the agenda setting theory: (1) first level agenda setting effects, (2) need for orientation, (3) second level agenda setting effects, and (4) the priming aspect of the agenda setting effects. In order to inspect the different research questions, individual experiments separately adopted corresponding approaches including the methodology of Iyengar and Kinder's (1987) classic agenda-setting experiments, consumer behavior research (e.g., Celsi & Olson, 1988; Greenwald & Leavitt, 1984; Zaichkowsky, 1985), attribute agenda setting (Kiousis et al., 1999) and priming research (Kim et al., 2002).

The results of the experiments indicate that the agenda setting theory also describes and explains the digital media environment. The issue salience of the online newspapers used in the first level agenda setting experiment was transferred successfully to subjects' issue salience. At the same time, the three sub-dimensions of the need for orientation – personal involvement, knowledge and effort required to attend to the message – played significant roles in the agenda-setting process. In the second level agenda setting experiment, online newspapers were proved to effectively transfer the attribute salience of an issue to the public. Specifically, the attributes with emotional direction play a significant role in agenda setting effects. Finally, the priming experiment with three different

sets of online newspapers supports the idea that the media set the audience's evaluative dimension relevant to some issues. Moreover, the experiment attested to the high degree of association between the second level agenda setting effects and the priming effects.

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CHAPTER 1. INTRODUCTION

We are living in a world where information floods our senses more than ever. The advances of new technologies including online services make this deluge swell faster and fiercer.

While many scholars in the field of journalism research have conducted various studies, the academic explorations of journalism based on new technologies are yet at their initial stages. This may be because such technologies are changing the nature of journalism so drastically that academia may not be able to keep pace with such high-speed transitions.

However, taking an old journalism cliché, “Nothing new exists without previously accumulated experiences,” we may catch up with some trends of the new journalism by scrutinizing their phenomena through the eyes of traditional media studies. This dissertation is an attempt to understand the latest contexts of the media by utilizing a now-traditional approach – agenda setting: salience transfer from one entity to the other (McCombs & Shaw, 1972).

Since McCombs and Shaw launched the agenda-setting theory with their seminal Chapel Hill study, scholars worldwide have published more than 300 empirical studies exploring this theory (Dearing & Rogers, 1992; Graber, 2000; Lang & Lang, 1983; McCombs et al., 2000). The theoretical framework has grown not only in the original field of journalism and communications, but also in other intellectual disciplines such as sociology, politics, and economics (Blood &

Phillip, 1997; Perloff, 1998; Roberts, 1997; Shapiro, 1999; Shoemaker & Reese, 1996; Sunstein, 2001). For those 40 some years, maintaining its central axiom – salience transfer –, agenda-setting intellectuals have discovered and elaborated the details of several aspects of the theory. Among those aspects are first level agenda setting (basic issue salience transfer), second level agenda setting (attribute salience transfer), need for orientation (the psychological explanation of the theory), and priming (the evaluative dimension of the theory). And now with the emergence of the Internet, the theory enters a new era (Aikat, 2000; Garrison, 2001; Pavlik, 1994; Pavlik, 2001; Sikes, 1994).

However, similar to the other journalism and communications research areas, the agenda setting proposition suffers from the lack of studies extending its theoretical structure to the new media settings. Originally, McCombs and Shaw explored the first level agenda-setting effects of newspapers, news magazines, and television news. While expanding into additional phases, most of the subsequent agenda-setting research has also focused on the effects of traditional mass media on the public (Iyengar & Kinder, 1987; Wanta, 1997; Winter & Eyal, 1981). Only a few studies have examined agenda-setting effects in the new media environment (Althaus & Tewksbury, 2002; Wang, 2000). Even those few studies about the new media were mainly concentrated on the first level agenda setting effects – issue salience transfer.

While such studies are more than welcome, it seems that more research is desired, in terms of quantities and kinds of influence, to expand the knowledge for understanding the media and their effects in the digital age. In the contemporary communication environment, more than 4,000 newspapers are online in the United States alone¹, and more than 10,000 newspapers are listed and linked to a news portal Web page², which contains newspapers online from all over the world. The public's interest in online media continues to increase. Nielson//NetRatings reported that around 40 million people visited the 15 most popular news Web sites including *CNN.com*, *Yahoo! News*, and *NYTimes.com* during a one-week period and that figure increased to more than 50 percent in the following week, when the U.S. war with Iraq broke out in 2003. These numbers indicate that the virtual world of communications and journalism is getting more diverse and complicated. We can see that the audience gathers around the news information delivered through the Internet lines. Consequently, it suggests that the new media should not be left largely unvisited by scholars of agenda-setting and other media effects. And regarding the agenda-setting theory, which is the focal point of this dissertation, the research should not be limited to the phase of the first level agenda setting effects but expanded to the second level effects. A psychological explanation for what makes audiences read and listen to the online media is another area, which should be answered by the journalism scholars. The role of

¹. <http://newslink.org/news.html>

². onlinenewspaper.com (<http://www.onlinenewspapers.com>),

the online media content in helping audiences set their evaluative dimensions about the issues also can be explored by the agenda setting studies.

In view of such needs, this dissertation explores four phases of the agenda setting effects in the digital age. It applies the propositions of the first level agenda setting effects, need for orientation, second level agenda setting effects, and priming aspects of the agenda setting effects to the new media environment. In short, the present dissertation examines whether those phases of agenda setting effects, which were built upon the traditional media environment, still work in the digital media settings. For the consistency of the methodological approach, the intermedia agenda setting effects, another potential phase of the agenda setting studies, is excluded in this dissertation. While the dissertation primarily focuses on surveys and experiments, the intermedia agenda setting studies mainly employ content analysis. To keep the methodological line of research simple and neat, the dissertation will focus on those four phases by excluding the intermedia studies.

This dissertation consists of seven chapters including this current introductory chapter. Chapter 2 will delineate the literature regarding the agenda setting theory. Detailed aspects of the theory's evolution will be explained. Chapter 3 will elucidate the methods that this dissertation takes. Largely, it will introduce the frameworks of the experimental method, selection of subjects and creation of online newspapers used in the experiments. From Chapter 4 to Chapter 6, individual experiments, the specific methodological approach for the individual

experiments and their results will be presented and discussed. Specifically, Chapter 4 will examine the first level agenda setting effects of the online media on the audience. At the same time, the need for orientation concept will be explored to explain the psychological reason for the audience to pay attention to the online media messages. In short, this part will investigate two phases of agenda setting theory, simultaneously. The second level agenda setting effects will be investigated in Chapter 5, which will test the simple salience transfer of contradictory attributes of an issue and the influence of attribute salience on first level agenda setting effects. Chapter 6 will be about the priming aspects of the agenda setting effects. An experiment will be conducted to test the online messages' influence on shaping the audience's evaluative dimension about an issue and its attributes. Finally, Chapter 7 will summarize the results and discuss the conclusion.

CHAPTER 2. EVOLUTION OF THE AGENDA SETTING THEORY

Agenda Setting Theory in the History of Mass Communication Studies

Throughout the history of mass communications research and journalism studies, scholars in the field largely discussed the roles and effects of mass media. While research focusing on media roles took one side, audience studies established the other side of the academic spectrum. As the so-called dominant paradigm elucidated such aspects of the communication process based on empirical/psychological tests and experiments (Gitlin, 1978), the cultural and critical paradigm underscored the fundamental ideologies and philosophies to explain the phenomena (Power et al., 2002).

Rooted in the dominant paradigm, the agenda-setting premise is generally appreciated as one of the most important milestones to theorizing media effects on the audience empirically and systemically (DeFleur, 1998). Furthermore, many scholars have evaluated the agenda setting theory as one of the comprehensive explanations of such effects, because it fine-tuned some shortcomings of earlier studies. By articulating some contingency conditions (audience's psychological influence on the measured degree of the media impact), the theory did not only avoid the blind effects like the bullet theory presented by the 'strong' media proponents, but also shunned the limited effects models like the two-step flow communications supported by the 'weak' media devotees (Severin & Tankard, 2001). It also sheds light on the nature of the news topics including obtrusiveness

(Zucker, 1978) and abstractness (Yagade & Dozier, 1990) reflected in the audience perception. In short, it explains the media effects not based on just one side of the mass communication spectrum, but based on both the mass media and the audience in a balanced way.

In this chapter, the author will introduce the core argument of the agenda setting theory with the five phases within its theoretical development for 40 some years. Each phase will be elucidated with some examples of specific studies.

Phases of the Agenda Setting Theory

Agenda setting theory began its journey from a simple hypothesis about ‘the transfer of salience from the media to the public.’ McCombs and Shaw, who launched the theory, first assumed that if the media highlighted some issues in their news presentation, those issues would be perceived as important in the audience’s minds (1972). The assumption was originally based on Lippmann’s idea of mass media bridging “the world outside and the pictures in our heads” (McCombs et al. 2000). They tested the hypothesis of the ‘issue’ salience transfer – “The mass media set the agenda for each political campaign, influencing the salience of attitudes toward the political issues” (1972, p. 177), and supported it through comparisons of the survey data with the media content. To test the hypothesis, they chose the 1968 presidential election campaign. They interviewed 100 residents of Chapel Hill, North Carolina, for about 20 days before the election, to find out what the residents thought were as the most important current issues.

They also analyzed the content of four newspapers, two news magazines, and two national broadcasts of evening news for the same period. And they compared the two sets of data – survey and analyzed news content. From the comparison, they found an almost perfect correlation (.96) and concluded, “the judgments of the voters seem to reflect the composite of the mass media coverage” (p. 181).

Their work changed the paradigm of media research from the “limited power of the mass media,” which was popular until the 1960s, to the “powerful role of mass media” in shaping the public agenda. Since their seminal study, scholars worldwide have published more than 300 empirical studies (Dearing & Rogers, 1992). For those 40 some years, agenda setting theory has been elaborated into five phases – first level agenda setting (the basic issue salience transfer), second level agenda setting (the attribute salience transfer), intermedia agenda setting (the salience transfer among the media), need for orientation (the psychological explanation of the theory), and priming (the evaluative dimension of the theory).

First Level Agenda Setting

As briefly discussed above, McCombs and Shaw initiated the theory with the hypothesis of ‘issue’ salience transfer, which is the main target of the first level agenda setting studies. The ‘issue’ here refers to the object, “on which the attention of the media and the public are focused” (McCombs, 2002, Archived in Suntory and Toyota International Centres for Economics and Related Disciplines

[STICERTD], p. 5). Such issues or objects could include the “public issues, political candidates, public institutions or competing brands of goods” (McCombs & Ghanem, 2001). The studies of such media effects in forming the public agenda were not limited to the works of those two initiators of the theory. In early 1970s, using the Gallup poll’s MIP (Most Important Problem) questions for the years 1960 through 1970 (for public opinion) and news articles from three weekly news magazines, *Time*, *Newsweek*, and *U.S. News* (for news content), Funkhouser (1973a) found a high correlation (.78) between the issues perceived as important in the public’s minds and the issues covered in the magazines.

The agenda setting studies showing the media influence on public issues became more refined when researchers included the time span during which the agenda setting effects could occur. Winter and Eyal sought to find the optimal time span of agenda-setting effects (1981). For the study, they focused on civil rights issues, which had ranged from 0 to 52% in the public’s minds (based on national public opinion) as the most important issue from 1954 to 1976. By comparing the stories on the front page of *The New York Times* with the public opinion, they concluded that there were strong agenda setting effects, especially across a four- to six-week period, which they believed to be “the optimal effect span or peak association between media and public emphasis of an issue” (p. 377). Applying time series analysis to this study, they added that “it is the recent media emphasis rather than cumulative effects over time that leads to public salience” (p.

381), at least, for the civil rights case. Ever since, the different optimal effect spans of various kinds of media on public issues have been discussed further (Wanta, 1997).

Interested in the mutual influence between the media and the public, Smith formulated a research question saying, “Lag lengths, the mix of controlling and amplifying feedback loops, as well as the primary direction of effect will vary by issue” (1987, p. 8). To see if there was any relationship between the media and public agendas related to certain community issues, a series of 22 surveys and the news content of a newspaper (the *Louisville Times*) from 1974 to 1981 were compared. From the comparison, he found high correlation between the overall agendas of the public and media sectors (Spearman’s $\rho = .65$). More specifically, crime, economic development and education issues were mutually influential; newspaper coverage about the environment and local government issues affected the perception of the public on those issues; and the public had influence on the news coverage about public recreation and health care. This kind of study was developed into an idea of exchange of the media, public and policy agenda on issues (Lang & Lang, 1983; Perloff, 1998; Salwen, 1995; Soroka, 2002; Tanner, 2004).

Need for Orientation

The concept of need for orientation asserts that each person feels some need to be familiar with his/her mental and physical surroundings. The addition of the

psychological explanation for information seeking to agenda-setting theory was originally derived from cognitive utilitarian theories of motivation, which are appropriate for explaining and emphasizing both political information search and cognitive effects because these theories emphasize the role of information in problem solving (Weaver, 1980). This concept highlighted the rationale of the agenda setting theory as a comprehensive explanation avoiding drawbacks of both the powerful and limited media effects. That is, by introducing and adopting the contingency conditions – variant psychological dimensions of respective individual audience members –, agenda setting theory succeeded in not only avoiding the blind effects models of the too “strong” media proponents, but also the limited effects models of the too “weak” media devotees (Severin & Tankard, 2001).

In McCombs and Weaver’s typology, an individual’s need for orientation is defined conventionally by two lower-order components: (1) relevance of the subject of the message and (2) degree of uncertainty concerning the subject of the message (Weaver, 1977). Low relevance (regardless of degree of uncertainty) results in a low need for orientation; high relevance and low uncertainty result in a moderate need for orientation; and high relevance and high uncertainty result in a high need for orientation. They also suggested that individuals with a high need for orientation about political issues are more susceptible to mass media agenda-setting influence than those with a moderate need for orientation, and that persons

with a moderate need for orientation are more susceptible to agenda-setting than are those with a low need for orientation.

When this concept was being extended to an era where some new media including cable television and the Internet are becoming popular, Poindexter et al. found that “the predictive power of this concept was again replicated for newspapers, local TV news and network TV news. ... (It) also predicts use of cable news and general news sources on the Internet” (2003).

Recent developments in media technology, however, have led to great changes in the public’s information environment (Schudson, 1995). Declines in attention to network television news and to newspapers have been coupled with increasing numbers of available channels of information via new media (Barber, 1988; Bimber, 2003). Too many media channels also create the problem of scattered attention or attention scarcity (Goldhaber 1997, DiMaggio et al. 2001). Disregarding information is another possibility coupled with the new media environment (Patterson, 2000). Furthermore, the fact that the two main lower-order components – relevance and uncertainty – were significantly understudied after they were first conceptualized, because they were believed as given, seems to lead to a need for a vast field of new research for better understanding of the media effects on their audience. Subsequently, the conventional measurement of need for orientation rooted in an assumption of almost universal exposure to the media agenda is now being challenged (Wanta, 1997).

Intermedia Agenda Setting

Among the phases of agenda setting theory's development, intermedia agenda setting focuses on the relationship among media, while the other phases are mainly related to the media's influence on the public. Intermedia agenda setting refers to one medium's agenda setting impact on other media's agenda (McCombs et al. 2000). That is, if one medium publishes its stories, other media will mirror the medium's content and deal with the content in their publications as importantly as in the original medium. In the line of such media effects, Whitney and Becker showed the wire service's influence on local media's agenda (1982). Wire services' effect on other media returned to the now classical White's (1950) gatekeeper study. Breed (1955) also showed such effects of the wire services' agenda and pointed out the trends of local media's standardization of news stories.

The effects were not limited to the wire services. Reese and Danielian (1989) identified *The New York Times*' agenda setting role by illustrating that the *NYT*'s coverage on the drug issue was followed by *The Washington Post* and *The Los Angeles Times*. Some television networks also followed the *NYT* issues. Semetko et al. (1991) showed the political parties' and media themselves' influence on American and British media election coverage. Hwang (2000) studied the intermedia agenda setting effects among nine Korean central newspapers by examining their first and last editions, and found effects of potential standardization of news through the intermedia agenda setting process.

Originally, the idea of exchanging influence among the media came from a simple curiosity – If media set the public agenda, then who sets the media agenda? While some prominent scholars identified the sources of the media agenda in various ways (Funkhouser, 1973b; Shoemaker & Reese, 1996), the intermedia agenda setting mainly attributes the source of the media agenda to other media. But it still opens the door to potential news agenda makers like politicians, PR, and other influential forces, in order to expand the theoretical territory of the agenda setting effects on the media.

As a matter of fact, some scholars argue that the phenomena, in which the media, the public and the government play roles simultaneously to determine the social agenda, should be explained with another concept, “agenda building” (Lang & Lang, 1983; Perloff, 1998; Salwen, 1995; Tanner, 2004). While the original idea of intermedia agenda setting effects deals with the exchange of agenda among the media outlets, the relatively new concept broadens the understanding of agenda formation to include the larger society.

Second Level Agenda Setting

The research focus of second level agenda setting is the transfer of “attribute” salience from the media to the public (Kiousis et al., 1999). Attributes are defined as “characteristics and traits that fill out the picture of each object” (McCombs et al. 2000). Regarding the media messages, attributes are also referred to as “the set of perspectives or frames that journalists and the public employ to think about

each object” (Ghanem, 1997). In short, attributes are certain features of objects or issues. Second level agenda setting suggested that certain attributes depicted in the media message were accentuated over other elements, and in turn, the attributes depicted in the media influence the public’s perception on those issues. In an attempt to clarify the difference between the first and second level in the agenda setting theory, McCombs et al. revised Cohen’s famous statement by asserting that “the media not only tell us what to think about (the first level of agenda setting – object salience), they also tell us how to think about it (the second level agenda setting – attribute salience)” (2000, p. 78).

Actually, the first level study being the initial point of agenda setting study, the second level study on attributes had been there as the seed for its theoretical development (Benton & Frazier, 1976; Shaw & McCombs, 1977; Weaver et al., 1981). Buried under the issue agenda setting, the second level agenda setting came to light when scholars began to ask how the various attributes of an issue can be transferred from the media to the public (Kim et al., 2002; Kioussis et al., 1999; McCombs et al., 2000). And such a concrete definition of attributes in agenda setting theory mentioned above has been reached through debates and convergence with another communication theory. The attributes of a certain issue stressed in the media share very similar meaning with frames in framing theory. As Tankard et al. defined framing as “the central organizing idea for news content that supplies context and suggests what issue is through the use of selection,

emphasis, exclusion and elaboration”(1999), framing theory emphasizes the choice and depiction of characteristics of certain issues or topics as does second level agenda setting. While some strong opinions to keep distance between the two theories exist, others even suggest the interchangeable usage of attribute agenda and frames for theoretical parsimony (Kiousis et al., 1999).

The second level agenda is further divided mainly into two dimensions – substantive and affective (Kiousis et al., 1999; McCombs et al., 2000). The substantive dimension is defined as the characteristics of news that help us cognitively structure news and discern among various topics. And affective attributes are the factors drawing emotional responses from the audience. In the second level agenda setting literatures employing the political candidates’ images, the substantive dimensions were generally the candidates’ ideology, qualifications and personality. Accordingly, the affective dimensions were the tones - positivity, negativity and neutrality - in candidates’ images presented in the news reports.

Conceptualizing the basic terms of the second level agenda and operationalizing the specific news content, scholars have determined the second level agenda setting effects of the media. Kiousis et al. showed the media effects of the political candidates’ images on the public’s minds (1999). Such effects were not limited to a single country. In Spain, the media also influences the audience perception of the candidates’ images (Lopez et al., 1998; McCombs et al., 2000).

Priming – Consequences of Agenda Setting Effects for Attitudes and Opinions

Among the five phases of the agenda setting effects theory, the ‘priming’ aspect is a relatively new approach applied to the agenda setting effects. Although the second level agenda setting effects formalized its name in the mid-1990s, which seems quite recent, those effects were considered at the time of the theory’s initiation with the first level agenda setting effects (Shaw & McCombs, 1977). Thus, the priming effects, which were born in conjunction with the agenda setting effects and began to predominate the terminologies in the field of journalism and mass communications studies in the mid-1980s, could be thought of as the youngest phase of the theory.

Priming refers to “the process in which the media attend to some issues and not others and thereby alter the standards by which people evaluate” objects in the real world (Severin & Tankard, 2001). While some may want to differentiate the terms of the agenda setting and priming, there are some reasons that the two theories usually stand together. First of all, the priming effects, which began to be well known to the journalism academia in the 1980s, was formalized by Iyengar and Kinder, when they explored the priming effects as a consequence of agenda setting effects (Iyengar & Kinder, 1987). Secondly, the concept of priming itself shares similarities with agenda setting theory. Priming focuses on ‘some’ issues, not ‘others,’ selected by the media, as does the agenda setting

theory. But priming goes one step further. Not staying at the level of salience transfer, it scrutinizes the media's role for influencing or altering the audience's evaluative dimension (Kim et al., 2002). Iyengar et al. found that the media set the criteria with which people could assess the presidential candidates' ability (1982); and Iyengar and Kinder formalized this process as priming effects, which set the guidelines that people use for shaping their opinions (1987). Linked together, while the agenda setting effects explain the salience transfer, the priming function seems to elucidate the media's role as opinion organizers. In short, they seem to work in tandem. Regardless of whether the psychological origins of these effects are based on their accessibility (Kinder & Sanders, 1996) or rooted in the inferred importance of a subject (Miller & Krosnick, 2000), they were generally treated as if they came from the same foundation. And scholars in the field of journalism and mass communications studies highlight the close association of these two media effects (Jacobs & Shapiro, 1994; Krosnick & Kinder, 1990).

While the early study of priming effects and agenda setting effects mainly considered the level of 'issue' (Iyengar & Kinder, 1987), more recent studies ask about the association between the attributes and the priming effects (Kim et al., 2002). And such an extension of thoughts (from the link between priming and first level agenda setting to the link between priming and second level agenda setting) might help people understand the nature of media and their effects more clearly. Specifically, the question as to "how people form their opinions on such

issues” (Kim et al., 2002), which seems more fundamental for the formation of opinions, is more closely related to “how to think about,” which is the core subject of the second level or “attribute” agenda setting, than “what to think about,” which is the subject of the first level or “issue” agenda setting. That is, the question, which asks about the fundamental reasons or methods of opinion formation through the media presentation, can be answered more appropriately by the second level agenda-setting environment than by the first level. As one of the forerunners in linking the concepts of attribute agenda setting and priming, Kim et al.’s study broadened the theoretical scope of the agenda setting effects further. Such an expanded scope now can be extended into the realm of online media, which have already become established channels for delivering news to the audience online.

Future of Agenda Setting Effects

As is the case of other theories, agenda setting theory has extended its territory while simultaneously converging with other theories. Its fusion with framing and priming presented earlier can be good examples for such an extension. The debate over the definitional similarities or dissimilarities between attributes in the agenda setting effects and frames in the framing theory helped the agenda setting theory fine-tune the conceptual ground for the attribute agenda setting effects (Ghanem, 1997; Kim et al., 2002; Kioussis et al., 1999; McCombs et al. 2000). The priming aspect of the agenda setting effects made the theory available for explaining the

media effects not only at the level of human cognition but also in regard to attitudinal or even behavioral perspectives (Iyengar & Kinder, 1987; Jacobs & Shapiro, 1994; Kim et al., 2002; Kinder & Sanders, 1996; Krosnick & Kinder, 1990; Wanta, 1997). Some also explored its conjunction with the field of the cultivation theory (Gross & Aday, 2002), which found that “watching the local news has large, significant effects on agenda setting” but found “no evidence that local television news cultivates fear of crime” (p. 42). Although their study did not support the general argument of the cultivation theory overall, it is meaningful in that it tested the effects of the media in a fusion of the two theories.

As seen in these cases, agenda setting research has been advanced in various ways. And it even furthers its theoretical framework in the time of new technologies, which allow multidirectional and multidimensional communication flows. In light of this, the current dissertation attempts to apply the various phases of the agenda setting theory discussed above to the new media environment. That is, the main research focus, which this dissertation takes, is to examine whether the agenda setting effects, which were built upon the traditional media settings, still wield explanatory power about the media effects in the digital age. Among the five phases, however, the phase of the intermedia agenda setting effects will be not be included in the dissertation to keep the dissertation’s methodological line – experiments – simple. That is, the dissertation does not use content analysis, which the intermedia agenda setting studies generally employ; thus, the study on

the intermedia agenda setting effects is excluded. In other words, the dissertation will explore the first level agenda setting effects, need for orientation, second level agenda setting effects, and priming aspects of the agenda setting effects in the new media environment. For the actual experiments and tests, online newspapers will be created. Detailed methodologies will follow in the next chapter and the individual hypotheses will also follow and be tested in the subsequent chapters (first level agenda setting effects and need for orientation in Chapter 4, second level agenda setting effects in Chapter 5, and priming aspects in Chapter 6), respectively.

CHAPTER 3. METHODOLOGY

The current dissertation employs the experimental approach to explore the agenda setting effects in the digital age. The main parts – Chapters 4, 5, and 6 – of the dissertation consist of three individual experiments. Primarily, they all take online newspapers as the stimuli and college students as the subjects. Since each experiment aims to achieve different research goals, each of them has different online newspaper stimuli and different sets of participants. All the participants were randomly assigned to experimental conditions. The three sets of experiments were conducted in a sequential manner so that the experiment with the most basic research questions were carried out first, then the one with the developed research questions and finally the set with the research questions for the newest phase were completed. That is, the author performed the experiment for the first level agenda setting effects and need for orientation first, then the second level agenda setting effects, and finally the priming aspects of the agenda setting effects in the digital age. They were carried out in this manner on the assumption that once the basic effects were detected, the experiments in the next level, which were coupled with more complex natures, could be explained more effectively. At the same time, the online newspapers, which were used as stimuli, were formatted somewhat differently for each of the three experiments to detect the various phases of the agenda setting effects. While the detailed specifications of each experiment will

be delineated in the respective chapters, the general scope of the experiments is introduced in the current chapter.

Experiment

The experimental designs used in the dissertation follow a very simple procedure of pretest, experimental treatments and posttest. The pre- and post-test mean the pre- and post-survey in the actual experiments. In general, the experimental procedure bears some advantages and disadvantages, and the experimental designs in this dissertation are no exception.

The advantages of the experimental method include the clear evidence of causality, control over the environment, and replication for other studies (Wimmer & Dominick, 1991). The current dissertation takes these advantages for exploring the agenda setting effects.

While the cause-effect link may be still arguable in some philosophical sense, the experimental procedure is believed to be the strongest research method in the social sciences to link cause and effect by controlling and/or manipulating the variables (Poindexter & McCombs, 2000; Severin & Tankard, 2001). Specifically, it is one of the methods which really meet the criteria of scientific research defined by the systematic, controlled, empirical and critical investigation of hypothetical propositions about the presumed relations among the observed phenomena (Kerlinger, 1986).

Another strong benefit of using the experimental method is its control not only over the variables but also over the environment. In particular, laboratory research can detach the experimental setting from the normal activity; this helps researchers to detect direct relations between the variables with less noise. The first two sets of experiments in the current dissertation use the laboratory setting and its respective advantages. Since the last experiment of this dissertation resembles the field setting, it offers a different set of benefits. More explanations for the field-like experiment employed in this dissertation will follow in the ‘Stimuli – Online Newspapers’ section below.

In most cases, agenda setting effects studies suffered from lack of causal links between the independent and dependent variables, since they generally compared the survey results and the news content analyzed at the macro level (Eichhorn, 1993). That is, because the original agenda setting research (McCombs & Shaw, 1972) and many of the subsequent agenda setting studies were dependent upon the survey and content analysis at the community level, they were vulnerable to criticism indicating the potential influence of outside variables, like interpersonal communication, other than the media’s sole effects. To overcome such criticism, Iyengar and Kinder and their associates applied the experimental design, with its inherent ability to control outside variables, to testing agenda setting effects and successfully supported the theory’s premises (Iyengar & Kinder, 1987; Iyengar et al, 1982). Thus, this dissertation adopts the experimental

approach to agenda setting study in an attempt to reveal the casual relation between the online media agenda and the audience agenda.

As a matter of fact, McCombs, who is one of the theory initiators, actually did attempt to elaborate the potential causality between the media agenda and the public agenda at the macro-societal level through survey research and content analysis (McCombs et al., 2000; Shaw & McCombs 1977; Weaver et al., 1981). When he and his associates studied the Spanish election (McCombs et al., 2000) with the methods of survey and content analysis, which are the original methods that the agenda setting studies use, they provided three conditions – correlation, time order and functional link – of the causality, which they argued were supported with those two methods. According to their conclusion, the study design, which featured the time order (collecting the survey data after the media presentation) and the functional link (controlling for the intermedia agenda setting and multiple media influence on the public agenda), successfully tested the agenda setting effects and found almost pure correlation (between the agenda of the specific media in the study and the agenda of the audience in the study). However, when taking into account other potential variables like interpersonal communication, which can also influence the effects assumed to be led by the media in their study, their methods (comparison of survey results and analyzed news content at the macro level) still seemed to offer less explanatory power than experimental research (Kerlinger, 1986). In view of this, the current dissertation,

which aims to seek the clear causal link between the agendas of online newspapers and audience by controlling for unexpected influences, primarily employs the experimental method. The experimental designs featured in the three main parts (Chapters 4 through 6) of the dissertation, which actually test the agenda setting hypotheses, have similar settings: pre-test, experimental treatments, and post-test.

While it enjoys the benefits of the experimental method, the dissertation has some disadvantages. It may not be free from criticism because of its artificiality and noted deviations from the natural environment. Because the study produces an unnatural setting by exposing some competing stimuli to the subjects, the results may be challenged as having little application to the real world. In particular, since the stimuli (online newspapers) for the experiments are artificially created, the results based on the experiments can be criticized for their ‘un-realness.’ The nature of the stimuli used will be discussed further in an upcoming portion of the dissertation. In other words, the current dissertation can be criticized for ‘double-unreality’ – unnatural setting and artificial online newspapers. Nevertheless, such artificiality might have a good potential to be replicated in the real world. Simply, it can be a necessary platform for the agenda setting effects’ causality, which can be further tested in the real world. Moreover, taking into account the ultimate goal of communication research, which pursues

the potential explanatory power of communication phenomena, such a weakness may not be a major problem but merely a problem in semantics (Miller, 1983).

Additionally, because the author, who designed the experiments and knew all the phases of the experiments, himself conducted the experiments, experimenter bias may be another problem (Rosenthal, 1969). To counteract potential experimenter bias, the studies for the dissertation did not accept any sponsorship, which could harm the study results. Furthermore, the questionnaires used in the surveys were assessed for their clarity and order by scholars who were not involved in the experimental procedure, which otherwise may intentionally or unintentionally lead to results in favor of the researcher.

Stimuli – Online Newspapers

As briefly noted above, the current dissertation created online newspapers as stimuli for the experiment. They were similar as to some features but also different from each other in some manner for all three experiments.

The online newspapers for the first two experiments looked like realistic online media and shared a similar format. Each newspaper, designed to have one main story with a picture and five other stories, had an identical layout as well as the same number and size of advertisements. But they had different content tailored to the purpose of each experiment. Each news story in the online newspapers was clickable to find the full story.

A professional Web designer helped to generate those papers. The online newspapers used for the third experiment had simpler features than those of the first two experiments. They only had hyperlinks, which led to actual stories the subjects then had to read, while those of the first two experiments had graphic layouts. The third experiment was designed to reflect more of a real-world setting in which the subjects of the experiment were set up to receive online papers whose file size would not exceed the receiving capacity of their e-mail account. All the news stories used for the three experiments were found from *Google News*, a news search engine. Detailed features of those online papers will be discussed further in the chapters for the individual experiments.

While the experimental method can suffer from the unnatural environment in which the subjects were placed to complete the given tasks, the current dissertation might have another limitation in explaining real world phenomena – its use of artificial online newspapers. As explained above, the experiments were conducted in unnatural settings with simulated online newspapers. However, the decision to create such online newspapers for the experiments was made for reasons that look superficially ironic but are inherently practical – the overabundance of online papers on the Web and lack of regular subscribers for just one specific online medium in the real world.

Since the start of the Internet's widespread use in the 1990s with the creation of Web browsers (Aikat, 2000; Pavlik, 1994; Pavlik, 2001; Sikes, 1994),

the changes in media based on the Internet have been seen as more fundamental than any other media technologies in history (Pavlik & McIntosh, 2004).

According to Pavlik and McIntosh, 11 U.S. newspapers began daily electronic versions in 1982, when they reached 10,000 subscribers. *Palo Alto Weekly* in California began to publish their newspapers online regularly in 1994, and it became the first regular online newspaper in America. In 1996, the most influential papers in the United States, including *The New York Times*, *The Washington Post*, and *The Wall Street Journal*, launched their Web sites. As of 2001, *WSJ.com* had over 500,000 paid subscribers, which is the second largest number for any news and information source online after *Consumer Reports Online* with its 600,000 subscribers (2004).

In conjunction with online media's expanding presence on the Internet, the number of people using the Internet has risen accordingly. In 2000, 52 million Americans went online each day (Howard et al., 2001). And, in terms of those conducting news searches online, the number is also steadily increasing.

According to a survey by the Pew Internet and American Life Project, 29% of Americans regularly go online to get news in 2004, which is up from 25% in 2002 and 23% in 2000. The percentage of typical day online news users went up to 18% in 2004 from 12% in 2000 (The Pew Research Center, 2004).

Even with such a large number of online media and their users nowadays, however, scholars like Pavlik and McIntosh do not see that the fundamental and

ultimate changes, which are presumably shifting the horizon of the media environment, are yet apparent to general media consumers (2004). Many people still watch television news and read newspapers and magazines in ‘analog’ format. Pew Research Center’s 2004 media consumer report notes that the newspaper readership is at 42% while 41% of Americans tune into the radio for news. In the same survey, 38% of Americans say they watch the cable news channels and 34% watch the network news program regularly. All those percentages are still greater than that for the regular online news users (29%), even though this percentage steadily grows (The Pew Research Center, 2004). The same survey reveals that among even the online news users, 70% of them use other news sources including TV news programs, newspapers and magazines to get about the same amount of news as they do with the online media. News audiences use the mixed sources, and do not just rely on the online media for their news information. Furthermore, 26% of Americans told the survey that they regularly visit ‘one or more’ online news sites including newspaper, magazine and TV Web sites. Since the “26%” is close to “29%” of all regular Internet news users, most of the regular online news users may be jumping around the news Web sites to get their desired information.

Based on these facts uncovered from scholastic research and field surveys, the author decided to create the online newspapers for these specific experiments using the procedural or sequential approach. First, since we have tens of thousands of online media, it did not seem reliable to detect the direct online

media effects by conducting content analyses of several popular online newspapers and surveys of general online users. Although these may produce some media effects on the public attitude, it would not be clear whether such effects are caused by the online media, because the audiences are getting their information not only from the online media but also from other various traditional news sources including newspapers, TV news programs and news magazines. If we use the general content analysis and survey, we will face the same criticism that many scholars point to as the main loopholes of the original agenda setting effects studies with traditional media.

Moreover, even if we use the content analysis of a specific online medium and a survey of its alleged “regular” audience for the agenda setting effects, the results cannot avoid the expected criticisms about unreliable causality. We previously observed the ‘regular’ Internet news user behavior, which included jumping around the online news sources for information (The Pew Research Center, 2004).

On the other hand, however, some scholars found that Internet news users went to well-known news Web sites. Hamilton argued that the Web sites of the top five most circulated print newspapers (*Wall Street Journal*, *USA Today*, *New York Times*, *Washington Post*, and *Seattle Times*) in the United States accounted for 41.4% of the total Web links generated by the top one hundred newspapers (2004). It indicates that, while the Internet news users jump around the online

news sources, there are some major news Web sites where users flock to read news online. These seemingly contradictory phenomena (Internet news users' rambling around various online news sites and gathering in well-known news sites) give a strong rationale for the author to use experimental methods to detect the potential agenda setting effects in the digital media environment. That is, the artificial experimental setting with created online newspapers and participants' exposure to them lets the researcher to avoid some latent extraneous variables, while such a setting has a potential to explain real online news reading behavior because it somewhat resembles the way a large portion of Internet news users are adopting now. That is, it used artificial online newspapers in an assumption that they were just like the five top online newspapers mentioned above. In short, the experimental setting in this dissertation would be the one representing a simple, but fairly common, strategy of online use.

If we are able to find and use such Internet users with high fidelity to only one online medium in the real field, it will be ideal to detect the agenda setting effects in the digital media setting even by using content analysis and survey. However, as addressed above, the Internet users' behavior is still complicated, so that we cannot tell for sure whether we remove all the outside variables, if we use content analysis and survey.

Thus, this dissertation uses experimental methods, and the online newspapers used in the current dissertation were created to avoid the extraneous

variables like the influence of the other conventional news sources and interpersonal communication. The procedural approach for the three sets of experiments makes this possible. The first and second experiments, which explore the first level agenda setting effects/need for orientation and the second level agenda setting effects respectively, expose the subjects to the created online newspapers once. Then, the post surveys were conducted shortly after the exposure. While avoiding the potential influence from outside variables, administering the survey shortly after the exposure can cause the demand characteristic or Hawthorne effects – basically, skewed results from the subjects' awareness of the experimental condition (Wimmer & Dominick, 1991). Thus, distractor tasks were given to the subjects to reduce such influences. For the distractor tasks, the subjects were asked to list some misspelled words that were intentionally located in each article. The goal of this task was to provide subjects with a time delay between the exposure to online newspapers and the study's measurement of the subjects' perceived salience on issues or attributes after the experimental treatments.

After examining the agenda setting effects for the first level and the second level, the final experiment was performed. The third experiment, which explores the priming aspect of the agenda setting effects, uses multiple exposures of the stimulus to the subjects for a three-week period. And the post survey is conducted a week after the final exposure. It may allow the intervention of

extraneous variables because it allows the subjects a week between the final exposure and the post-survey, which is different from the first and second experiments. As briefly noted in the “Experiment” section above, the final experiment is more like a field experiment, which is different from the lab experiment used for the first and second experiments. That is, the researcher does not have as much control over the subjects as in the lab experiment. But once the basic agenda setting effects of the online media are supported in the first and second experiments, which control the outside variables as much as possible, it seems reasonable to go on to the next stage without the advantages of the lab experiment but with the advantages of the field experiment to explore the effects in a more realistic setting (Westley, 1989). Since it is a field experiment, no distractor task is given to the subjects. But as in the previous experiments, all the stories also come from *Google News*.

Participants – College Students

To explore the agenda setting effects of the online media, undergraduates from a large southwestern university in the United States were recruited to participate in the study to earn extra course credit. They were asked to complete a survey before and after the exposure to the stimuli in all three sets of experiments. In both surveys, they answered a questionnaire, which generally asked about issue salience (first level agenda setting effects), attribute salience (second level agenda

setting effects) and opinions for a certain issue (priming aspect of the agenda setting effects), respectively, in accordance with the experiment purpose.

While some may criticize the selection of college students for the subjects as a convenience sampling, two basic reasons for the selection – familiarity with the Internet and education level of online news audiences – can compensate for the criticism. Americans going online tend to be young and well educated, although the online population is getting more diverse (Nie, 2001). According to the recent Pew Research Center’s media consumer report, the age cohort from 18 to 29 was the biggest portion (30%~36%) of people reading news online regularly during 2000 to 2004 (The Pew Research Center, 2004). Another study examining the demographics for visiting the Internet use also notes that “10-to-19-year-olds constituted the largest group” followed by the 20-to-29-year-olds (Chow et al., 1998). In view of this, it seems natural that those age cohorts use the Internet or the online news media most heavily because they have grown up in the 1990s era of Internet expansion. Most of the subjects participating in the experiments matched these age ranges.

Furthermore, most of the current college students will reach the “college graduate” category and already are at the “some college” level, which makes up 69%~85% of regular online news users (The Pew Research Center, 2004). That is, education level matters for online news usage, and current college students can be thought as members of the heavy online news users group consisting of the

“college graduate” and “some college” groups. In sum, considering the age span of college students, their selection as the subjects of experiments exploring online agenda setting effects seems viable and highly reliable.

When the subjects were recruited, ethical standards for human subjects were explained, and only the participants agreeing with the standards entered the experimental and survey sessions. That is, they were informed that participation is voluntary; there will be no harm to the participants of the study; the information provided by the participants in the research will be confidential; the information will not be associated with them individually but reported as a part of the complete study results, and so on (Poindexter & McCombs, 2000; Wimmer & Dominick, 1991).

Survey

Subjects were asked to complete a pre- and a post-survey before and after the exposure to the stimuli. In every experiment, the pre- and post-survey had exactly the same questions to avoid inconsistent measurement and to preserve the reliability of the experiments (Babbie, 1992; Chaffee, 1996; Poindexter & McCombs, 2000; Rosenberg, 1968; Wimmer & Dominick, 1991). In most cases, the majority of the subjects were asked to read the news articles of the online newspapers very carefully. Some others were asked to evaluate the newspaper design as the control group for a part of experiments. Regardless of the difference in the tasks, all the surveys were designed to test the effects of the stimuli – online

newspapers – on the subjects’ perceived salience on the issues/attributes and judgment tendency. The questionnaires include questions on attitude, beliefs, opinions, demographics, psychographics and so on. Most questions were closed ended questions, and were designed to create interval ratio data. In general, the experimental design with the pre- and post-survey closely follows the methodology of Iyengar and Kinder’s classic agenda-setting experiments (1987). Detailed explanation of the survey questions and procedures will be discussed in the individual chapters for each experiment.

In conjunction with the surveys and experiments, one more thing should be discussed – subjects’ interactivity with the online newspapers in the experiments and/or the navigation function of the stimuli. For all the experiments, the subjects were not asked to ‘navigate’ or ‘surf’ the stimuli in a way that they might want, but asked to specifically ‘click’ on the given hyperlinks and ‘read’ the full stories attached to the links. That is, the author wrote on the instruction sheet, “(Now you can see the online newspaper on the computer screen.) ... You will find the full news stories by clicking the links (or headlines in the online newspaper)... You can read the stories one by one. After reading a story, ... write a summary for each story...” In a sense, this may challenge seriously the main goal of the dissertation to seek online media effects, since it may exclude the ‘navigation’ factor, one of the important “interactivity” features in the online world (Pavlik and McIntosh, 2004). Discouraging them from navigating the Net

and requiring them to read the stories only appearing on the given online newspapers may, in fact, challenge the validity of the study (Chaffee, 1996; Poindexter & McCombs, 2000; Wimmer & Dominick, 1991).

Some scholars, however, note that the term “interactivity,” which could embrace the “navigation” function, can be interpreted in various ways (Manovich, 2001) even to include the click of a computer mouse to open e-mail or the choice of TV channels or newspapers and their contents. While such diverse interpretations of interactivity or navigation can lead some people to believe that we cannot think of online media effects without a certain interaction, others think that merely opening the online newspaper put on the computer screen or delivered via e-mail on the computer screen is a kind of interactivity. The current study followed the latter interpretation and proceeded as though the subjects were subscribers of the online newspapers delivered to the computer screen. In fact, this proceeding was developed due to the actual difficulties in finding regular online newspaper subscribers at this point of the study. While the Internet has blossomed and rapidly developed from the mid-1990s, we have not yet observed many subscribers of one specific online newspaper. Even though there are growing numbers of regular subscribers, many online users jump between the online media to find news (Pavlik & McIntosh, 2004; The Pew Research Center, 2004). Thus, by creating these online papers and their “assumed” subscribers in an experimental setting, this dissertation attempted to show the potential for an

online newspaper's effects. More details about the interactivity will be further discussed in the last chapter of the dissertation.

Again, the present dissertation applies most phases (first level, need for orientation, second level, and priming aspect) of the theory to the digital media settings. It is one of the first comprehensive steps to take the agenda setting theory in novel directions with new media environment. And since the current dissertation attempts to probe news aspects of the agenda setting process in the new media environment, .10 level of statistical power will be interpreted as meaningful to explain the potential of the online media effects.

CHAPTER 4. First Level Agenda Setting and Need for Orientation: Issue Salience Transfer and Refining “Need for Orientation” as an Explanation for Agenda Setting Effects in the Digital Age

INTRODUCTION

In more than 300 empirical studies regarding agenda setting effects (Dearing & Rogers, 1992), which have been published since the theory was launched by McCombs and Shaw’s seminal Chapel Hill study (1972), a central element was implicit. The element is the concept of need for orientation, a psychological explanation of why the media can set the audience’s agenda (Poindexter et al., 2003; Wanta, 1997; Weaver, 1977).

However, despite its theoretical importance, this concept has been understudied during recent decades, a time of dramatic changes in communication technologies and environments. In order to fill this void, the experiment in this chapter examines whether the concept of need for orientation continues to explain agenda-setting effects in this digital era, while also exploring the first level agenda setting effects in the new media settings. Furthermore, this study refines the need for orientation concept by incorporating aspects of consumer behavior research and by revisiting and explicitly incorporating an earlier aspect of need for orientation, the effort required to attend to media messages. The central goal of this experiment is a better understanding of basic agenda-setting effects in this new era.

BASIC FIRST LEVEL AGENDA-SETTING EFFECTS IN THE DIGITAL AGE

In the years after the Chapel Hill study (McCombs & Shaw, 1972), the core agenda-setting literature focused on the transfer of salience from the media to the public. While various phases have been studied and elaborated, the first level agenda setting effects phase, which posits that the pattern of media coverage on issues influences the pattern of public concern for those same issues, stood as the most basic premise of the theory. That is, the first level is the backbone of the theory's whole framework.

Originally, McCombs and Shaw (1972) explored the agenda-setting effects of newspapers, news magazines, and television news. Most of the subsequent agenda-setting research also focused on the effects of the traditional mass media on the public (Iyengar & Kinder, 1987; Wanta, 1997; Winter & Eyal, 1981). Only a few studies have examined agenda-setting effects in the new media environment (Althaus & Tewksbury, 2002; Wang, 2000). However, as noted in the previous chapters, audiences in general are now exposed to tens of thousands of online media, and the public's interest in online media continues to increase. Such phenomena seem to indicate that experts or scholars in the field of journalism and communication studies should examine the new media environment closely to help the public understand the novel communication trends and use the information online wisely. Thus, the experiment in this chapter,

which first seeks to explore the first level agenda setting effects of the online media, begins with this baseline hypothesis from traditional agenda setting theory:

H1: Issue salience in online newspapers will influence the audience's issue salience.

While this baseline hypothesis will be tested to examine the agenda setting effects in the digital age, it will also play an important role in determining whether the need for orientation concept can be studied further, because the hypothesis is the basic proposition in which the concept of need for orientation is rooted. Because this study ultimately seeks to re-conceptualize the need for orientation, finding the transfer of issue salience from the online news media to the public (i.e., basic agenda setting effect) is a necessary condition. The re-conceptualization of the need for orientation will be conducted by re-operationalizing the two conventional sub-dimensions (relevance and uncertainty) and bringing back another sub-dimension (effort required to attend to the message), which has long been disregarded in the need for orientation studies. The variance of the agenda setting effect is what need for orientation explains.

At this point, the experimental approach that this chapter takes should be clarified further. While it will be fully explained in the “METHODS” section shortly, it seems necessary to introduce a part of the experiment. This study's experimental design featured a ‘2 (control group vs. experimental) x 2 (high vs. low effort)’ factorial design. For the *experimental condition*, the experiment

featured six economic news stories. For the *control condition*, news stories on six different topics were placed in the online newspaper.

Although it can be argued that the experimental version of the online newspaper with only stories about the economy is not a ‘realistic’ test of the agenda setting effects of online media (H1), testing this hypothesis is only a secondary consideration and is no more than a replication of previous findings by other researchers (Althaus & Tewksbury, 2002; Wang, 2000). As previously noted, the occurrence of agenda setting effects is “a necessary condition” for testing the roles of the three sub-dimensions of need for orientation concept, which will be tested by H2, H3 and H4, in the agenda setting process, respectively. The key concepts in those hypotheses, which will be introduced shortly, are the new contribution of this dissertation. Alternatively, H1 could have been omitted and treated methodologically as a manipulated variable in the experimental design.

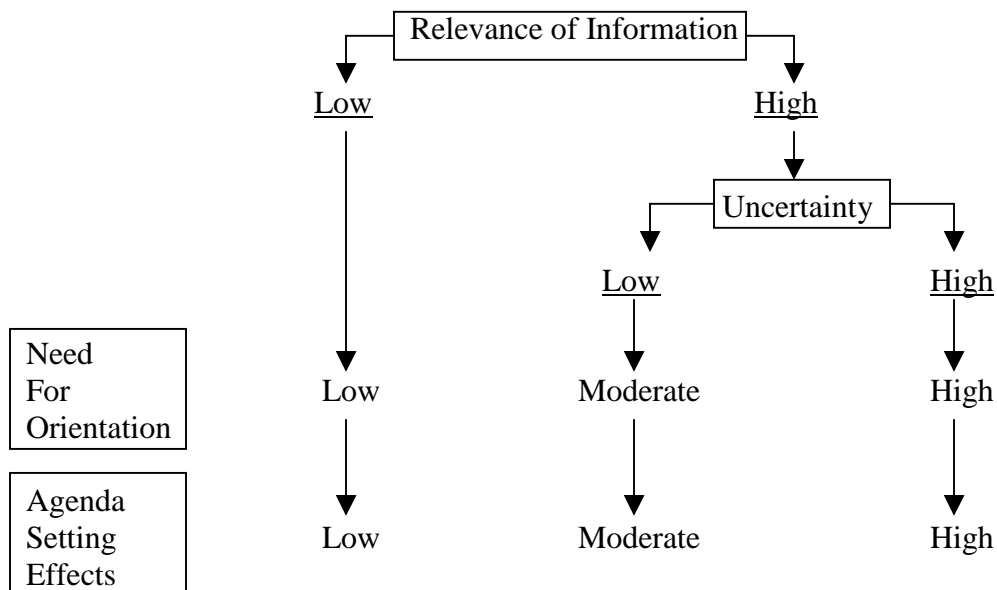
REFINING THE NEED FOR ORIENTATION

The concept of need for orientation originally came from cognitive utilitarian theories of motivation, which assume that people feel some need to be familiar with their mental and physical surroundings (Weaver, 1977; 1980).

In agenda setting theory, as introduced in Chapter 2, an individual’s need for orientation is defined conventionally by two lower-order dimensions : (1) relevance of the subject of the message and (2) degree of uncertainty concerning the subject of the message (McCombs & Weaver, 1973). According to McCombs

and Weaver, low relevance (regardless of degree of uncertainty) results in a low need for orientation; high relevance and low uncertainty result in a moderate need for orientation; and high relevance and high uncertainty result in a high need for orientation. At the same time, they suggest that the higher the need for orientation about the issues an individual has, the higher the person's susceptibility to the media's agenda setting influence. (See Figure 4-1)

Figure 4-1: Conventional Need For Orientation and Agenda Setting Effects



Recent developments in media technology, however, have led to great changes in the public's information environment. This raises questions as to whether the two main components of the conventional need for orientation – relevance and uncertainty – can explain the agenda setting effects, if any, in the more complicated media environment. Specifically, declines in attention to network

television news and to newspapers have been coupled with increasing numbers of available channels of information via new media (Barber, 1988; Bimber, 2003).

The second focal point of this research is whether the conventional definition of need for orientation can explain agenda-setting effects in this new environment, where the audience can lose attention or simply disregard the information more easily than ever.

Since the conventional measurement of need for orientation is rooted in an assumption of the public's almost universal exposure to the media agenda, it is doubtful if we can understand agenda-setting effects in this more complicated and individualistic new media environment without considering *the effort required to attend to media content* in addition to the relevance and uncertainty of the media's message. In prior decades when newspapers and television news essentially saturated the environment of most individuals, little effort was required to be aware of the core items on the media agenda. Consequently, researchers did not measure this element.

In this new media environment, there is a great opportunity to re-conceptualize the concept of need for orientation. Research on consumer behavior will likely contribute helpful insights, because need for orientation is rooted in the cognitive utilitarian theories of motivation and information processing frameworks, on which much of consumer behavior research is based. Though based on the original ideas creating the need for orientation model this

experiment attempts to open the door to a broader and more detailed investigation of need for orientation in the digital era going beyond the original formulation of the idea. That is, the new conceptualization that will be introduced in this dissertation is explicitly linked to the two old components of need for orientation (relevance and uncertainty) and another component (effort required to attend to the message), which was considered at the original concept of need for orientation.

The re-conceptualization of need for orientation in this dissertation considers the following three components of need for orientation: (1) personal involvement, (2) knowledge, and (3) effort required to attend to the message.

Personal Involvement

When Weaver conceptualized relevance, he highlighted involvement with, interest in, amount of discussion about, participation in, sense of effectiveness and commitment to issues and/or topics as tools of measures for the relevance (1977). Among them, the involvement, which has close connection with the motivation, has been more emphasized as a crucial link to relevance in various studies (McCombs, 1999). Additionally, as consumer behavior research (Cohen, 1983; Greenwald & Leavitt, 1984; Zaichkowsky, 1985) and cognitive theories of motivation (Weaver, 1977), what drives people to do something, suggests, personal involvement with the informational stimuli could go along with relevance in information seeking process, which is a basic driving force of agenda setting effects.

In this way, we encompass the previous conceptualization of the ‘relevance’ of need for orientation with the concept of ‘involvement’ because perceived personal relevance is considered to be the essential characteristic of involvement (Celsi & Olson, 1988). That is, an individual’s level of involvement with an issue is determined by the degree to which she/he perceives the concept to be personally relevant. In the context of agenda-setting research, McCombs (1999) investigated personal involvement and found a high degree of consistency in the nature of personal involvement with the issue nominated as the most important problem facing the country. These results further support the inclusion of personal involvement as one of the components of need for orientation.

‘Personal involvement’ is explicitly employed in this study, replacing ‘relevance’ in the original need for orientation concept. As noted earlier, this new operationalization is closely aligned with the original concept of relevance. That is, ‘personal involvement’ is one kind of relevance. More clearly, it is a more specific aspect of relevance, which can represent a facet of the need for orientation role in the agenda setting process in a more distinctive way. At the same time, substituting the traditional need for orientation concepts with the new terminologies also influences the methodological approach. While the original concept – relevance – was measured with ordinal scales in general, the experiment in this chapter uses an interval scale by replacing relevance with personal involvement. For instance, the involvement measure employed in the

experiment is borrowed from the Personal Involvement Inventory (Zaichkowsky, 1985), which has measured the degree for such a motivation with continuous scales. By adopting ‘personal involvement’ for ‘relevance,’ this experiment helps the author to conduct more sophisticated statistical tests with interval scales. Detailed explanation will follow in the ‘METHODS’ section.

Prior investigations of need for orientation – in which relevance was the initial condition for determining the level of need for orientation – generally found that higher need for orientation generated higher exposure to media information, which, in turn, produced greater agenda-setting effects (Weaver, 1980). Restating these results in terms of personal involvement yields this hypothesis:

H2: Individuals with higher personal involvement with an issue will show greater agenda-setting effects than those with lower personal involvement.

Knowledge

Ability to process information is largely a function of the amount and type of knowledge that a person has acquired through prior experience (Celsi & Olson, 1988). To the extent that relevant knowledge can be retrieved from memory in a given situation, individuals have the ability to process new information in their environments. These environments were measured by the degree of professed political party affiliation and firmness of choice of political candidate, when Weaver assessed the political uncertainty for the original need for orientation

concept (1977). Accordingly, knowledgeable people are expected to be able to minimize the ‘uncertainty’ around an issue when making a decision and to process relevant information more effectively than novices are (Celsi & Olson, 1988).

As discussed above, knowledge can be regarded as the opposite concept of uncertainty since knowledge is expected to minimize uncertainty. In general, prior research revealed that high uncertainty leads to high need for orientation, which in turn produces greater agenda setting effects than low uncertainty. Thus, it is reasonable to believe that ‘low knowledge’ will function in the same way as ‘high uncertainty.’

However, ‘knowledge’ and ‘uncertainty,’ which is the variable found in most need for orientation studies, are not rooted in the same conceptual ground. That is, ‘more knowledgeable’ does not necessarily mean ‘less uncertain’ or vice versa. A person with low uncertainty might have lots of knowledge or none at all. Likewise, a person with high uncertainty might already know a lot, but want to know more, or know nothing more. Need for orientation is a psychological concept reflecting individual differences, and individuals vary considerably in how much they want to know about a particular topic.

Nonetheless, knowledge has been shown to predict media exposure and to increase interest in a wide range of related issues (Neuman et al., 1992; Neuman, 1986), both of which, in turn, increase susceptibility to agenda-setting effects

(Hill, 1985; Wanta, 1997). This implies that knowledge of news topics gained through reading or prior experience is likely to promote a form of attentiveness and comprehension that enhance the agenda-setting influence of the media.

The above discussion suggests that there is a subtle difference between knowledge and (un)certainly, and that the level of knowledge and degree of (un)certainly influence agenda setting effects in different manners, even though the two concepts share some overlapping dimension of human cognition. Given that there is an ambiguous distinction between ‘(un)certainly’ and ‘knowledge’ in the previous literature, this chapter attempts to determine in which way ‘uncertainly and/or low knowledge or ‘certainly and/or high knowledge’ work in the need for orientation perspective. Thus, by replacing ‘uncertainly’ with ‘knowledge’ in the process of new conceptualization of the need for orientation, the following hypothesis is suggested:

H3: Individuals with higher knowledge about an issue will show greater agenda-setting effects than those with less knowledge.

The substitution of ‘uncertainly’ with ‘knowledge’ is also rooted in the choice of better measurement with an interval scale. The details of the measure are introduced in the ‘METHODS’ section.

Effort Required to Attend to the Message

Earlier assumptions about the universal availability of the news agenda, coupled with the decision not to incorporate the degree of effort required to attend to the

message in measurements of need for orientation, may not be applicable in today's media environment. The widespread availability of public affairs information could be a phenomenon of the 1970s, or of, at least, the era before the Internet. In the epoch of information diversity and abundance after the emergence of the Internet, we cannot expect that information about public affairs is as attractive or as widely diffused as in 1970s. Information abundance may distract people's collective interest in any one subject because it creates the problem of scattered attention or attention scarcity individually (DiMaggio et al., 2001). It is unlikely that public affairs information, competing with a host of other subjects, would prove to be an exception to the trend. (Barber, 1988). Scholars now express "concerns about fragmentation and the loss of the common public sphere" (Bimber, 2003). These arguments imply that we should not take the effort required to attend to a message as a given when we consider need for orientation in the new media environment. Furthermore, news media are not always readily available to the general public in some developing or underdeveloped countries. Thus, disregarding this factor, effort required to attend to the message, in the conceptualization of need for orientation may hamper the application of this concept to new media or to a cross-national agenda-setting study.

Cognitive effort has been the focus of numerous studies in psychology (Fiske & Taylor, 1984; Newell & Simon, 1990) and consumer behavior research (Kahneman et al., 1982). Consistent findings are that individuals have limited

cognitive resources and allocate them judiciously as individuals expend the cognitive effort to make a satisfactory decision. The fundamental assumption of need for orientation is that each individual feels some need to be familiar with his/her mental and physical environment, suggesting that individuals will exert cognitive effort to attend to media messages that satisfy their need to be familiar with certain issues. And, less familiar issues will require more cognitive effort than familiar ones do. Thus, the degree of 'effort required to attend to the message' will be positively associated with the level of need for orientation and will yield greater agenda-setting effects.

Another important finding is that the level of cognitive effort (i.e., allocation of cognitive resources) is positively related to the depth of information processing (Eagly & Chaiken, 1993; Greenwald & Leavitt, 1984). In consequence, greater effort is more likely to influence individuals' memory and belief systems. Applying this phenomenon to the agenda-setting context, it is expected that a low level of cognitive effort will not significantly influence an individual's belief about the importance of the issue, but a greater level of effort will. Specifically, in the digital era where declines in attention to network television news and to newspapers have been coupled with increasing numbers of available channels of information via new media (Barber, 1988; Bimber, 2003), such cognitive effort could be an important factor in understanding the degree of agenda setting effects. In conjunction with the assumption that it is doubtful whether agenda setting

effects can be understood in this more complicated and individualistic new media environment with solely the two components of the conventional need for orientation and not including cognitive effort, such important findings suggest the following hypothesis:

H4: Individuals exerting more effort to attend to the message will show greater agenda-setting effects than those exerting less effort to attend to the message.

These four hypotheses will be tested with a before-after experimental design involving a control group and an experimental group. Hypothesis 1 predicts differences between the control and experimental groups. No agenda-setting effects are expected in the control condition, which is a baseline situation for determining the presence of agenda-setting effects in the experimental condition. Hypotheses 2, 3 and 4 predict differences among subjects in the experimental condition where agenda-setting effects are expected. Need for orientation explains the strength of these effects.

Another way of describing the anticipated outcomes is the different interaction role of each component of need for orientation between the two conditions (control and experimental). The authors expect a graph of these results to be a 'V' lying on its side, such that there is no significant difference between subjects high and low on each component in the control condition, but a significant difference in the experimental condition. Consideration of this interaction provides an alternative test of the hypotheses based on all the subjects

in the experiment, both the control group and the experimental group. This additional evidence is especially important for the examination of the effort required to attend to the message, which is the new component considered here.

H5: For each of the components of need for orientation – involvement, knowledge, and effort required to attend to the message, there will be both a main effect and an interaction with agenda-setting effects.

Finally, it will be meaningful to see which components among the three will play more significant roles in explaining the agenda setting effects than others. Since relevance or personal involvement has been considered the baseline condition and uncertainty or knowledge as the second order condition of the need for orientation in the traditional media environment, it is worth exploring to see whether the same conditions work in the digital media settings. Specifically, the significance of the effort required to attend to the message, the new component tested in this experiment, is of interest. Thus a research question is suggested:

RQ: Among the three components of the need for orientation, which will play more significant roles than others?

METHODS

This study's experimental design featured a '2 (control group vs. experimental) x 2 (high vs. low effort)' factorial design with pre- and post-experimental measures. In-depth interviews with graduate students of a major southwestern university to choose the proper issues to be used in the study preceded the experiment. Two principal considerations guided the selection of the issue to be used in the study.

The issue should (1) appear in both current media coverage and the prior agenda-setting literature, and (2) be appropriate for use as a stimulus for the population of available subjects, college students. Ten graduate students participated in the interviews and were asked to list five most important problems or issues facing this country at the time of the study. Among various issues, ‘the war with Iraq,’ ‘education,’ ‘economy,’ ‘crime,’ and ‘drugs’ were identified as important issues. During the period when the in-depth interviews were conducted, war with Iraq was imminent and most students considered it the most important national problem. Therefore, for experimental purposes, the issue of the war was avoided to eliminate a ceiling effect.

The ‘economy’ was selected as the target issue for the experiment because it is not generally believed to lead to strong media effects (Jasperson et al, 1998; Smith, 1977; Soroka, 2002). That is, the media usually are not the main player influencing the public to think such an issue is important. Thus, the ‘economy’ furnishes a strong test. If manipulations of salience regarding the economy lead to heightened salience of the issue among test subjects, it suggests strong evidence of agenda-setting effects. For control and hypothesis-testing purposes, three other issues – drugs, crime, and education – were used in the experiment.

Stimulus Materials

A critical feature of the experiment was the creation of realistic online newspapers and selection of news stories properly reflecting the issues chosen for the study. A

professional Web designer prepared two different (control vs. experimental condition) online newspapers (See Appendix I). Each newspaper, designed to have one main story with a picture and five other stories, had an identical layout as well as the same number and size of advertisements. The author manipulated issue salience by placing a different number of news stories in the two online newspapers. A professional journalist, who has been working for newspapers for about 10 years, selected the stories.

For the *experimental condition*, the experiment featured six economic news stories. For the *control condition*, news stories on six different topics were placed in the online newspaper. In contrast to the focused attention on the economy in the experimental condition newspaper, the diffuse agenda of the online newspaper in the control condition was not expected to produce agenda-setting effects.

This experimental design closely follows the methodology of Iyengar and Kinder's (1987) classic agenda-setting experiments, particularly their two assemblage experiments in which zero exposure was compared with high exposure (six news stories on the target public issue).

All 12 stories for the experiment reported here were retrieved by an online news search engine, *Google News*, from one week prior to the experimental sessions. Each news story in the online newspapers was clickable to find the full story.

Experimental Procedures

The pre-experimental questionnaire was administered one week before the experiment as a form of online survey, and the post-experimental questionnaire was completed shortly after the experiment. Originally, 67 undergraduates majoring in journalism or advertising from a large southwestern university were recruited by e-mail to participate in the study to earn extra course credit. By clicking-through the URL link in the e-mail, they were led to the online survey questionnaire that asked about the importance of the four issues – economy, drugs, crime, and education, and their personal involvement with and knowledge about each issue.

One week later, they were invited to take part in the experiment. Seven students were unable to participate, leaving 60 students in our pool. Subjects' ages ranged from 19 to 28, with a mean age of 21.6. The 24 males and 36 females were randomly assigned to each of the four conditions – control vs. economy x high vs. low effort – and participated in the experimental sessions held in two small computer laboratories. The subjects were isolated from each other so that they could complete the experiment independently.

Upon arriving at the laboratories, subjects were asked to read the instructions, which covered the computer monitor screen showing one of the stimulus newspaper Web sites. The instructions asked subjects to write down the times when they started and finished the experimental tasks. Two different

instruction sheets were prepared for the manipulation of an individual's effort required to attend to the message. For the high effort group, subjects were asked to read all six news stories on the Web site and summarize each article in one or two paragraphs. In contrast, those in the low effort group were asked to evaluate the design of the online newspaper in freestyle and write their evaluation in five paragraphs.

Upon completing the experimental tasks, subjects were asked to complete a distraction task – listing ten misspelled words that the author intentionally placed in each article. The purpose of this task was to create a time delay between the exposure to online newspapers and the second measure of issue importance. The task lasted around 8 to 17 minutes. Upon completing the distraction task, they were asked to go to the survey questionnaire site. The post-experimental questionnaire consisted of subjects' evaluation of the stimulus Web site (i.e., attitude), their report on the amount of time spent reading the articles, and their beliefs about the importance of the four national issues.

Of the three components of need for orientation, only the individual's "effort required to attend to the message" was manipulated, while the other two components – "personal involvement" and "knowledge" – were not manipulated but taken as they already existed. Because need for orientation is a psychological concept, considerable variance can be expected among the individuals participating in the experiment for all three components. But because "effort

required to attend to the message” is the new component measured here, it was explicitly manipulated in order to ensure adequate variance across subjects.

Measures

The study used previously developed scales to measure the variables of primary interest – issue importance, personal involvement, knowledge, and effort – as well as an additional control variable, attitude toward the Web site (i.e., evaluation of the design). In order to overcome the limitations of prior operationalizations of need for orientation grounded in ordinal-scale categorical variables, this study employed continuous scales, which allow more sophisticated statistical procedures.

Dependent Measure (Issue Salience): To test the basic agenda-setting hypothesis, the author measured subjects’ beliefs about the importance of four national issues in the pre- and post-experimental questionnaires. Five items were borrowed from the Iyengar and Kinder (1987) experimental studies. On both occasions, subjects judged the importance of each of the four national problems, indicated their media attention for each, the extent to which each was deserving of additional government action, and the frequency with which they talked about each in everyday conversation on 7-point scales (Iyengar & Kinder, 1987). The internal consistency reliability scores for these four measures were satisfactory across all the issues (economy: $\alpha = .81$, drug: $\alpha = .80$, education: $\alpha = .84$, crime: α

= .86), and they were summed to form an index score of the importance of each issue.

Personal involvement: As noted above, the involvement measures were borrowed from the Personal Involvement Inventory (Zaichkowsky, 1985). Specifically, involvement was measured by a five-item set of seven-point semantic differential scales. The items were anchored by “of no concern to me/of concern to me,” “irrelevant to me/relevant to me,” “matters to me/doesn’t matter to me,” “significant to me/insignificant to me,” and “essential to me/non-essential to me.” The scores of the five items were summed to obtain an index score of personal involvement ($\alpha = .95$).

Knowledge: The four self-reported measures of knowledge were seven-point scales from the consumer behavior literature: “How much do you know about the _____ issue?” (anchored by “I know nothing about it” and “I know a lot about it”; Moore & Lehmann, 1980), “I am confident that I know enough about the _____ issue in this country.” (anchored by “Strongly Disagree” and “Strongly Agree”; Mitchell & Dacin, 1986), “How much are you familiar with the _____ issue in this country?” (anchored by “Not familiar at all” and “Extremely familiar”; Raju, 1977) and “How would you rate your knowledge about the _____ issue in this country relative to the rest of the population?” (anchored by “One of Most Knowledgeable Persons” and “One of Least Knowledgeable

Persons”; Johnson & Russo, 1984). The scores of these four items were summed to obtain an index score of individual knowledge on the issue ($\alpha = .87$).

Effort: Cognitive effort is frequently measured by the amount of time spent completing the cognitive task (Bettman et al., 1990). For this study, an individual’s effort required to attend to the message was assessed by the time spent reading news stories in online newspapers. Each subject reported the total time spent reading in minutes.

Attitudes toward the Web site: To eliminate an alternative explanation for the outcomes of the experiment – differences in subjects’ attitudes toward the Web site –, this study assessed evaluations of online newspapers. Fishbein and Ajzen (1975) viewed attitude as comprising solely an evaluative or affective response to an object, so the experiment used the concept of attitude toward the Web site, which was measured by four seven-point semantic differential scales taken from prior studies (MacKenzie et al., 1986; Mackenzie & Lutz, 1989; Homer, 1990). These items were anchored by “pleasant/unpleasant,” “good/bad,” “favorable/unfavorable,” and “likable/ unlikable.” The scores of the four items were summed to generate an index score of attitude toward the Web site ($\alpha = .93$).

Note that all three components of need for orientation – involvement, knowledge, and required effort – are measured in both the control and experimental condition. The expectation, stated in Hypothesis 1, is that agenda-setting effects will be found only for the economic issue, the topic of all the news

stories in the experimental condition. No agenda-setting effects are expected for the drug, crime, and education issues, which are the topics of the news stories in the control condition. Because the concept of need for orientation describes and explains the strength of agenda-setting effects, the basic tests of Hypotheses 2 – 4 will use only the subjects in the experimental condition, where the author expects to find the agenda setting effect.

The auxiliary tests of these hypotheses – outlined by Hypothesis 5, which predicts both a main effect and an interaction for each of the three components – will use the subjects from both the experimental and control conditions. However, the emphasis in these analyses is on the interaction – no significant difference in issue salience between subjects high and low on each component in the control condition, but a significant difference between them in the experimental condition. This is particularly important in regard to effort required to attend to the message, the new component of need for orientation examined here. An outcome supporting Hypothesis 4 could be interpreted as evidence for this concept as a component of need for orientation or, alternatively, evidence for the role of effort *per se* in creating agenda-setting effects. But if the interaction predicted by Hypothesis 5 is found, this alternative explanation based on effort *per se* is eliminated.

Finally, the research question will examine the relative importance of the three components in predicting the agenda setting effects.

RESULTS

To assess the success of the manipulations, ANOVAs were conducted for attitude toward the online newspaper and time spent reading online news articles as dependent variables. No difference was found between the experimental and control conditions in subjects' evaluations of the online newspapers, $F(1, 58) = .01, p = .95$. Furthermore, those who summarized the articles in their online newspapers ($M=34.63, S.D = 10.83$) spent more time reading articles or texts (i.e., more effort) than did those who evaluated the online newspaper design ($M=18.33, S.D. = 7.68$), $F(1, 58) = 45.26, p < .01$. These results show that the design of two equivalent online newspapers and the manipulation of the level of individual effort appeared successful.

In order to test the hypotheses, a series of ANOVAs and two-way ANOVAs were conducted with the individual's change score on issue importance from pre- to post-exposure as the dependent variable. A regression was conducted for the relative importance of the three components in predicting the agenda setting effects.

H1: Agenda-Setting Effect. Finding the agenda setting effect of online newspapers is a necessary condition for continuing the theoretical exploration into the role of need for orientation. The critical test of an agenda-setting effect entails observation of the change in perceived issue importance over the course of the experiment. Table 4-1 shows that subjects in the experimental condition where the

online newspaper emphasized the economy became more concerned about the issue of the economy ($M = 1.90$, $S.D. = 2.59$) than those in the control condition ($M = .70$, $S.D. = 2.26$), $F(1, 58) = 4.14$, $p < .05$. However, for three other issues, i.e., drugs, education, and crime, no significant differences were found between the control and experimental groups in changes in issue importance. The results strongly support H1, i.e., the basic agenda-setting effect. Based on this result, other hypotheses on need for orientation were examined.

Table 4-1. Changes in issue importance

Issue	<u>Control</u>	<u>Experiment</u>	d.f.	F
	N = 30	N = 30		
	Mean (S.D.)	Mean (S.D.)		
Economy	.70 (2.26)	1.90 (2.59)	1	4.14*
Drug	1.27 (3.69)	1.17 (3.07)	1	.91
Education	.17 (1.72)	.80 (2.94)	1	.31
Crime	-.38 (2.83)	-.20 (3.53)	1	.83

* $p < .05$

H2: Effects of Personal Involvement on Agenda-Setting Effects. Hypothesis 2

predicts that the level of personal involvement with the issue will be positively related to the strength of the agenda-setting effects.

To test the hypothesis, the author divided the subjects in the experimental condition into two groups (high vs. low personal involvement groups) using a median split. Consistent with the hypothesis, Table 4-2 shows that for subjects with higher personal involvement with the economic issue ($N = 14$, $M = 2.75$, $S.D.$

= 2.57) there were greater changes in issue importance after exposure to the economic issue-salient Web site than for those with lower personal involvement (N = 16, M = .93, S.D. = 2.34), $F(1, 28) = 4.09, p < .05$.

Table 4-2. Impact of 3 components of need for orientation on agenda setting

	<u>High</u> Mean (S.D.)	<u>Low</u> Mean (S.D.)	d.f.	F
Personal Involvement	2.75 (2.57)	.93 (2.34)	1	4.09*
Knowledge	1.07 (2.58)	2.74 (2.40)	1	3.36†
Effort	3.20 (2.27)	.60 (2.26)	1	9.86**

† $p < .10$, * $p < .05$, ** $p < .01$

H3: Effects of Knowledge on Agenda-Setting Effects. To test hypothesis 3 about the influence of knowledge on agenda-setting effects, subjects in the experimental condition were divided into two groups (high vs. low knowledge group) using a median split.

Table 4-2 indicates that the degree of an individual's knowledge marginally affects agenda-setting effect, $F(1, 28) = 3.36, p < .10$. Contrary to the direction of effect predicted by the hypothesis, less knowledgeable subjects (N = 15, M = 2.74, S.D. = 2.40) had greater change on economic issue importance after being exposed to the online newspaper than those with higher knowledge (N = 15, M = 1.07, S.D. = 2.58). The result suggested that those low-knowledge subjects felt a high level of uncertainty which, consistent with early need for orientation

research, contributes to a highly motivated media use that paves the way for greater agenda setting effects.

H4: Effects of Effort on Agenda-Setting Effects. Hypothesis 4 predicts that subjects exerting a higher effort will show greater agenda-setting effects than those exerting a lower effort. Table 4-2 indicates that individuals' efforts significantly influence agenda-setting effects, $F(1, 28) = 9.86, p < .01$. Consistent with the hypothesis, the result showed that the subjects with higher effort ($N = 15, M = 3.20, S.D. = 2.27$) had statistically significant greater changes on economy issue importance than those with lower effort ($N = 15, M = .60, S.D. = 2.26$).

H5: Main Effects and Interactions. H5 expects an interaction between the two conditions (control and experimental) and each of the components of need for orientation – involvement, knowledge, and effort required to attend to the message – that moderate the influence of issue salience in the online newspaper. Three two-way ANOVAs were conducted with the changes in economic issue importance from pre- to post-experiment as the dependent variable.

The ANOVA results with personal involvement (high vs. low) and the two conditions (control vs. experiment) show that there are significant main effects for involvement, $F(1, 56) = 6.15, p < .05$, and manipulated conditions, $F(1, 56) = 4.15, p < .05$, but no significant interaction effect, $F(1, 56) = .64, p = .43$.

The ANOVA results for knowledge (high vs. low) and the two conditions (control vs. experiment) reveal a significant main effect for knowledge, $F(1, 56)$

= 5.32, $p < .05$, and a marginally significant main effect of manipulated conditions, $F(1, 56) = 3.91$, $p < .10$. However, there is not an interaction effect (knowledge x conditions), $F(1, 56) = .77$, $p = .38$.

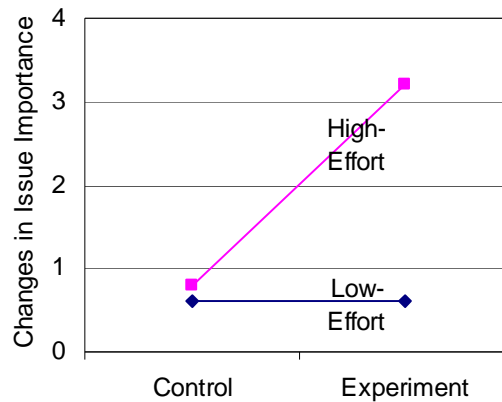
The ANOVA result with effort (high vs. low) and the two conditions (control vs. experiment) as the independent variables show significant main effects for efforts, $F(1, 56) = 5.64$, $p < .05$, and manipulated conditions, $F(1, 56) = 4.14$, $p < .05$, plus a significant interaction effect between issue salience in the online newspapers and efforts required to attend to the message, $F(1, 56) = 4.14$, $p < .05$ (See Table 4-3).

Table 4-3. Agenda-setting effects by issue salience of the online papers and efforts

Source	Sum of Squares	d.f.	F-test	Significance
Manipulated Conditions	21.60	1	4.14	.047
Effort	29.40	1	5.64	.021
Interaction	21.60	1	4.14	.047
	<u>Low-Effort</u>		<u>High-Effort</u>	
	Mean (S.D.)	N	Mean (S.D.)	N
Control Group	.60 (2.16)	15	.80 (2.61)	15
Experimental Group	.60 (2.26)	15	3.20 (2.27)	15

Specifically, as seen in the Figure 4-2 below, consistent with the initial prediction, the issue salience of the online newspaper had a significant agenda-setting effect under the high-effort condition, $F(1, 28) = 7.81$, $p < .01$, but not under the low-effort condition, $F(1, 28) < 1$.

Figure 4-2. Moderating Role of Efforts on Agenda-Setting (Coupled with Table 4-3)



RQ: Relative Importance of the Three Components. To further explore the relative importance of each component of the need for orientation, the author conducted a multiple regression analysis.

Table 4-4. Need for orientation and agenda-setting effects

	B	S.E	Beta	t-value
Constant	-6.99	2.02		-3.46*
Personal Involvement	2.72	.83	.533	3.29*
Knowledge	-1.45	.75	-.284	-1.92†
Effort	.09	.03	.527	3.28*
$R^2 = .44, F(1, 28) = 6.78, p < .01$				
† $p < .10$, * $p < .05$				

As shown in Table 4-4, the R^2 for the regression model is .44 ($p < .05$). Consistent with the previous ANOVAs, two significant variables - personal involvement and effort - and one marginally significant variable - knowledge - were identified. The results show that the absolute value of the beta coefficient of personal involvement (.533) is greater than two other variables, indicating that personal

involvement has the greatest explanatory power for the agenda-setting effects, followed by efforts (.527) and knowledge (-.284). This also supports the idea that the efforts should not be disregarded for explaining the agenda setting effects in the digital age.

CONCLUSION AND DISCUSSION

This chapter attempted (1) to examine the agenda-setting function in the new media environment, (2) to redefine the concept of need for orientation, and (3) to empirically investigate the effects of need for orientation in the agenda-setting process. The findings supported the basic principle of agenda-setting theory in the digital era, which is that the online newspaper's issue salience was transferred to the subjects' issue salience. Some of the conceptual drawbacks of the conventional 'need for orientation' were refined by incorporating important constructs in other academic disciplines as well as by bringing the original factor suggested by Weaver (1977), i.e., the degree of effort required to attend to the message, back into the conceptualization. Furthermore, methodologically, this study measured all sub-dimensions of the newly defined need for orientation with continuous scales, which allowed the author to employ more sophisticated statistical analyses than the prior studies. The results indicated that each sub-dimension of need for orientation played a significant role in the agenda-setting process in the digital era; and specifically, the individual's personal involvement and effort are positively related to the extent of agenda-setting effects, whereas

his or her knowledge is negatively associated with the agenda-setting effects. Furthermore, an individual's effort required to attend to the message moderated the agenda-setting effects, producing a significant interaction. However, the author was not able to find moderating effects of personal involvement and knowledge on the agenda-setting effects. This may be attributable to the experimental procedure, in which only effort was manipulated, but personal involvement and knowledge were taken as they already existed, i.e., not manipulated. Future research may explore the implications of this difference.

The refined need for orientation, as a whole, explained a significant proportion (44%) of the agenda-setting effect, but still leaves a lot of variation unexplained. Thus, future research can examine agenda-setting effects with need for orientation and other contingent conditions in tandem in order to better understand the agenda-setting process. Other contingent conditions, such as demographic variables (Hill, 1985; Wanta, 1977), level of interpersonal communication (Wanta & Wu, 1992), and the nature of the issue (Zucker, 1978; Yagade & Dozier, 1990), may explain additional variation in agenda-setting effects.

The study found that the less knowledge subjects had about an issue, the greater agenda-setting effects they exhibited after being exposed to an issue-salient online newspaper. The results indicated that audience members with high-knowledge can minimize their uncertainty about the issue, and in turn they were

less likely to show agenda-setting effects than those with low-knowledge. However, since the study employed subjective rather than objective or actual measures of knowledge, the results and discussion are conditional upon subjective as opposed to objective or actual knowledge. The two types of knowledge are distinct even though they are often positively correlated with each other (Johnson & Russon, 1984; Raju et al., 1995). Park and Lessig (1981) argued that subjective knowledge is a combination of knowledge and self-confidence and may have a somewhat different effect on information processing than objective knowledge. Thus, future studies employing measures of objective knowledge would be valuable to extend the understanding of the role of 'need for orientation' in agenda-setting research.

**CHAPTER 5. Second Level Agenda Setting:
Attribute Salience Transfer of the Global Warming Issue from Online
Papers to the Public: Attribute of Environment vs. Attribute of Economy**

INTRODUCTION

In the years after McCombs and Shaw's seminal Chapel Hill study (1972), the core agenda-setting literature focused on the fundamental maxim of the theory: "Elements prominent in the mass media's picture of the world influence the prominence of those elements in the audience's picture" (McCombs et al., 2000). Throughout the development of the theory, the elements have been mainly summarized into two facets – issues for the first level agenda setting and attributes of issues for the second level. While the first level focuses on the objects, the second level deals with the traits or characteristics of the objects (Kiousis et al., 1999). Taking attributes into consideration as aspects of agenda setting led to a huge leap in terms of theoretical boundaries. With this idea, agenda setting became able to explain media effects as not only telling people "what to think about" but also telling them "how to think about" it (McCombs et al., 2000). As is the case of the first level agenda setting study, however, the second level agenda setting effects have been examined in the context of the conventional media. In view of this, the experiment in this chapter examines the effects of "telling people how to think about," the second level agenda setting, which refers to the transfer of attribute salience from the media to the public, with

online media, which have not yet been a common resource for agenda-setting research.

SECOND LEVEL AGENDA SETTING

To make the study focus clear, it seems necessary to elaborate the concept of the second level agenda setting effects, again. The research focus of second level agenda setting is the transfer of attribute salience from the media to the public (Kiousis et al., 1999). Attributes are defined as “characteristics and traits that fill out the picture of each object” (McCombs et al., 2000). Regarding media messages, attributes are also referred to as “the set of perspectives or frames that journalists and the public employ to think about each object” (Ghanem, 1997). In short, attributes are certain features of objects, such as public issues or political leaders. Second level agenda setting suggests that certain attributes depicted in the media message are accentuated over other elements, and in turn, the attributes depicted in the media influence the public’s perception of those issues.

While the definition of attributes of the agenda setting theory share very similar meaning to frames in framing theory (Kiousis et al., 1999; McCombs, 1997; McCombs & Ghanem, 2001), the experiment in this dissertation uses the term “attributes” to take the parsimonious stance explained in the Chapter 2.

In summary, the experiment in this chapter explores the function of second level agenda setting in the digital era, with two online newspapers, each of which presents a different perspective on an issue. For the experiment, the author chose

“global warming” as the object, an issue which involves debates over its scientific truthfulness and its relation to economic development.

GLOBAL WARMING: SUBSTANTIVE AND AFFECTIVE ATTRIBUTES

Issue Selection: Global Warming

The environment is described in some earlier studies as an issue driven by the media (Smith, 1987; Soroka 2001; Soroka 2002; Xu & Bengston, 1997). That is, the media can make the environmental issue salient in the public’s thinking through their news reporting relatively more easily than other issues. Such possibility of ‘easy salience transfer of the environmental issue’ can be discussed with notions of “obtrusiveness and unobtrusiveness” or “concreteness and abstractness” in the agenda setting theory (Yagade & Dozier, 1990; Zucker, 1978). Zucker noted that the more obtrusive an issue is, the less likely the issue salience is transferred from the media to the public (1978). That is, if individuals experience the issue more directly, their opinions will less likely be affected by the media presentation. Additionally, Yagade and Dozier suggested that the more concrete an issue is, the more likely the issue salience is transferred from the media to the public (1990). In light of these notions, the environment is an issue likely to be unobtrusive and concrete, since most individuals do not experience environmental subjects directly everyday but the issue has become more tangible through dramatic domestic and international events in recent decades (Soroka 2001; 2002).

Global warming has been one of the highly debated environmental issues in recent decades. Specifically, the issue gradually became prominent with several international events including the 1992 Earth Summit and the 1997 Kyoto Protocol. In particular, the Kyoto Protocol linked economic aspects clearly to this issue when it tried to regulate individual countries' industrial activities, which allegedly cause emissions creating great quantities of greenhouse gases. Based on this allegation, economic interest has been generally regarded as the opposition to environmentalism in connection with the global warming effects debate. Interestingly, the economy is described in some earlier studies as an issue that is seldom transferred from the media to the public (Soroka 2001; Soroka 2002).

In short, the global warming issue has two interesting aspects in terms of agenda-setting theory. One is that it has two opposing or competing perspectives simultaneously – the environment and the economy. Furthermore, the salience of the environmental aspect has been regarded as readily transferable from the media to the public, while the salience of the economic aspect has not. That is, the salience transfer of the environment has been “media-driven,” while the salience transfer of the economy has not. In view of this, the author thinks it would be meaningful to see what roles the media play in agenda-setting effects on the global warming issue, as related to both attributes – the environment and the economy. This mixture of features of the issue can be usefully examined within

the theoretical structure of second level agenda setting – substantive and affective attributes.

Substantive and Affective Attributes

The substantive dimension and the affective dimension were introduced as the two main facets of the attributes of objects in previous second level agenda-setting studies (McCombs et al, 2000). Although there are other arguments urging further development of the dimensions of the attributes (Ghanem, 1997), these two main dimensions were discussed as the fundamental aspects of attributes (Kiousis et al., 1999). The substantive dimension is defined as “the characteristics of news that help us cognitively structure news and discern among various topics” (Kiousis et al., 1999). The affective dimension captures emotional responses from the audience (McCombs et al., 2000; Kiousis et al., 1999).

The characteristics, that is to say, the aspects of the issue of global warming, considered here are its impact on the environment. These aspects, which characterize the global warming issue, can be defined as the substantive attribute for this study. The focus of the experiment is not just about global warming effects – the issue –, but mainly about its accompanying attribute. This leads to the first hypothesis.

H1: The substantive attribute salience of global warming effects presented in the online newspaper will influence the audience’s perceived substantive attribute salience of the global warming effects.

Besides this substantive aspect, there is another dimension – the conflicting structure of the global warming effects between the environment and the economy. That is, an attribute of global warming is that it is frequently portrayed in the media as being a result of economic development. Economic growth is reported quite often to highlight the hazards of global warming effects. On other occasions, however, some news reports read that economic progress has nothing to do with global warming. Subsequently, some media have often reported that we have to reduce global warming effects at the expense of economic development, while others have not. This leads to two opposing ‘tones’ of the global warming issue. The author focuses on this ‘affective dimension’ of the global warming issue to help hypothesize about media influence on the audience’s emotional reactions – ‘pro-environment’ or ‘con-environment (i.e., pro-economy).’

H2: The affective attribute salience of global warming effects presented in the online newspaper will influence the audience’s perceived affective attribute salience of the global warming effects.

As mentioned briefly above, the environment is an issue driven by the media, and the salience of the economic issue is hardly ever transferred from the media to the public. These two hypotheses test the salience transfer of attributes using two aspects of global warming. Although the online media’s effects on the salience transfer of the overall attributes is the main focus of this study, it should also be meaningful to see whether there is any statistically meaningful difference in the

media effects according to the nature of the contrary attributes. Owing to the nature of the experiment, a broader research question seems appropriate to handle this subject:

RQ1: Will the contradictory nature of attributes – pro or con – of an issue influence the media’s attribute agenda-setting function in a distinguishable way?

Finally, the relationship between the first and the second level agenda-setting effects is explored in this chapter. While different phases (the first level, second level, need for orientation, intermedia influence and priming) of agenda-setting theory are being studied individually, the relationship among the phases is still understudied. The relationship between the first-level (object or issue) agenda and the second-level (attribute) agenda has been argued as implying that the media’s repetitive presentation of certain attributes of an issue would eventually lead to the prominence of the issue itself in the public’s minds. That is, the media’s stress on certain traits of an object provide “compelling arguments,” which in turn have audiences change or reinforce their perceptions about the object itself (Ghanem, 1997). Based on this assumption, Kioussis et al. conducted experiments to examine the effect of attribute salience on object/issue salience (1999). The experiments, however, were limited only to the effect of the substantive attributes of the issue, and the results were marginally significant. The attributes, which can provide the compelling arguments, do not have to be only the substantive attributes. They can also be the affective attributes. Based on the above discussion, it seems necessary

to examine the effect of the two different types of attributes (i.e., substantive and affective) on object or issue salience. The following two research questions are suggested in the online newspaper setting:

RQ2a: Will the change of the substantive attribute salience in the audience's minds due to the media exposure influence the audience's overall perceived object salience of global warming?

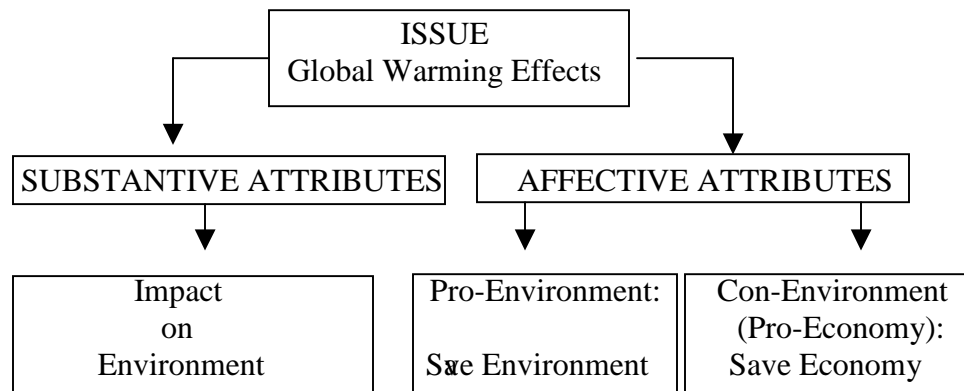
RQ2b: Will the change of the affective attribute salience in the audience's minds due to the media exposure influence the audience's overall perceived object salience of global warming?

In sum, Hypothesis 1 and 2 predict agenda-setting effects for both the pro-environment and the con-environment (i.e., pro-economy) audiences, the former of which will be exposed to news reports supporting the reduction of global warming effects at the expense of economic developments; the latter is exposed to news reports supporting economic development at the expense of efforts to reduce global warming effects. News reports for both sides contain the affective attributes (emotional directions favoring the reduction of global warming effects or favoring economic development) mingled with the substantive attributes (scientific arguments for the credibility of global warming effects). Significant agenda-setting effects are expected for both groups of subjects. Research Question 1 explores the statistically meaningful differences in agenda setting effects between the contradictory attributes of a same issue. Research Question 2 attempts to see a link between the object agenda-setting effects and the attribute

agenda-setting effects. This will be examined for both the pro-environment and the con-environment (i.e., pro-economy) audiences.

The relationship between and among the issue and attributes are simplified in the figure below:

Figure 5-1. Relationship between Issue and Attributes



METHODS

This study's experimental design featured a controlled independent variable (pro- vs. con-environmental condition) with pre- and post-experimental measures of three dependent variables – issue salience, substantive and affective attribute salience.

Stimulus Materials

Critical features of the experiment were the choice of news articles properly reflecting the opposing attributes of the global warming issue and the creation of realistic online newspapers. A professional journalist, having worked on environmental issues for more than two years, retrieved 12 news stories for this

study from an online news search engine, *Google News*. Half of the stories were about pro-environmental news, and the other half were about con-environmental news. They were selected from the week prior to the experimental sessions.

Based on the selected news articles, two different online newspapers (pro- vs. con-environmental conditions) were prepared by a professional Web designer (see Appendix). Both online newspapers contained some extent of the substantive attribute of the global warming issue, but they differed in terms of the affective attribute of the issue (positive for the environment vs. negative against the environment). For controlling the design effects, each online newspaper had one main story with a picture and five other stories, respectively, and had an identical layout as well as the same number and sizes of advertisements. The author manipulated the online newspapers' attributes of global warming by placing different news stories in them.

For the *pro-environmental condition*, the newspaper featured six news stories favoring the reduction of global warming effects and the reduction of the influence of economic development on global warming effects. The stories also discussed some disastrous impacts of global warming phenomena on the Earth's environmental system. It was clearly reported in the news articles that the reduction of global warming effects might keep the Earth clean and environment-friendly. The headlines of the news stories in the pro-environmental condition read, "Global warming kills 160,000 a year: Scientists warned the 'side-effects' of

climate change”; “Global warming threatens the Alpine plants”; “Western governors join to fight global warming”; “Climate victims are ‘refugees’”; “Polluters rally to ratify Kyoto pact” and “Oceans’ acidity worries experts.”

On the other hand, for the *con-environmental (i.e., pro-economy) condition*, six news stories showed strong support for economic development despite the global warming effects. Specifically, these stories tried to indicate that the global warming effects have little to do with economic development. At the same time, the articles criticized others’ efforts to link global warming and economic or industrial development. They also asserted that the Earth is even greener, even though some environmentalists warn of environmental disaster, and they put emphasis on the government’s development drive by stressing the administration’s policy favoring economic growth. The headlines of the news stories presented in the con-environmental condition read, “Earth greening rapidly since 1980: 42 percent observed increase in the Amazon rain forest”; “McCain-Lieberman will be costly, Energy department warns”; “Russia puts global climate pact in doubt”; “Bush reaffirms opposition to Kyoto, proposes alternatives”; “Misinformed missteps on warming” and “Bush decides against regulating CO₂.”

Each story in the online newspapers was clickable to find the full story.

Experimental Procedures

The pre-experimental questionnaire was administered ten days before the experiment in the form of an online survey, and the post-experimental

questionnaire was completed shortly after the experiment. For the pre-experimental survey, originally 131 freshmen majoring in journalism from a large southwestern university were recruited by e-mail to participate in the study to earn extra course credit. By clicking-through the URL link in the e-mail, they were led to the online survey questionnaire, which asked about issue importance (i.e., issue salience), and beliefs on substantive and affective attributes of the global warming issue.

Ten days later, those who completed the pre-test were invited to participate in the experiment. Among the original 131 students, 18 were unable to participate in the experiment and 13 students provided incomplete data, which left 100 students in the data pool. Subjects' ages ranged from 19 to 28, with a mean age of 21.6. The 58 males and 42 females were randomly assigned to each of the two conditions – pro-environmental vs. con-environmental conditions – and participated in the experimental sessions held in two small computer laboratories. The subjects were isolated from each other so that they could complete the experiment independently.

Upon arriving at the laboratories, subjects were asked to read the instructions, which covered the computer monitor screen showing one of the stimulus newspaper Web sites. The instructions asked the participants to evaluate the design of the online newspaper, to read each of the six articles, and to provide a summary of each in one paragraph, which can contain up to three sentences. The

author designed this instruction to encourage the participants to read every article carefully.

Upon completing the experimental tasks, subjects were asked to complete one distractor task – listing ten misspelled words that were intentionally placed in each article. The goal of this task was to provide subjects with a time delay between the exposure to online newspapers and the second measure of issue importance. The task lasted from 11 to 23 minutes. After completing the distractor task, subjects were asked to go to the survey questionnaire site by clicking through the link at the bottom of the online newspapers. They answered the post-experimental questionnaire, consisting of items about global warming issue salience and the substantive and affective attribute salience of the issue. Then they were thanked and debriefed.

Dependent Measure

In order to examine the proposed hypotheses and research questions, the author measured three dependent variables in both the pre- and post-experimental questionnaires. Furthermore, each subject's salience change was assessed by the post-exposure measure minus the pre-exposure measure of the variables.

Substantive attribute salience: The substantive attribute of the global warming issue was conceptualized as the extent of the subjects' belief in the truthfulness or credibility of global warming effects upon the environment. A nine-point Likert type scale anchored by “strongly disagree” and “strongly agree” was used (“I

believe that global warming will do harm to the environment of the Earth”) to assess a subject’s salience on the substantive attribute.

Affective attribute salience: The affective attribute of the global warming issue was conceptualized as the extent of the subject’s emotional reaction to the positive (pro-environment) or negative (con-environment) tone of the news stories delivered by the media. To measure a subject’s salience on the affective attribute of the issue, another nine-point Likert type scale was used. The subjects were asked to answer the question (“I believe that we have to reduce the effect of global warming at the expense of the economy”) anchored by “strongly disagree” and “strongly agree.” “Strongly agree” is considered to be more pro-environment, and “strongly disagree” is considered to be more con-environment or pro-economy in our experiment.

Object or Issue Salience: To examine RQ2a and RQ2b, the author measured subjects’ beliefs about the importance of the global warming issue – object or issue salience. Borrowing the schemes of Iyengar and Kinder’s study (1987), the questions asked the subjects to judge “the importance of the global warming issue.” They were also asked to indicate “their media attention to the global warming issue,” “the extent the global warming issue was deserving of additional government action,” and “the frequency with which they talked about the global warming issue in everyday conversation” on nine-point scales. The internal consistency reliability scores for these four measures were satisfactory (Cronbach

$\alpha = .81$), and they were summed together to form an index score of the salience of the global warming issue.

RESULTS

The proposed hypotheses and research questions were examined by two paired t-tests and a series of ANOVAs. Table 5-1 shows the descriptive statistics.

Table 5-1. Descriptives tatistics of attribute salience transfer

IV	DV	N	Pre-Exposure		Post-Exposure	
			Mean	S.D.	Mean	S.D.
Pro-environmental group	Substantive Attribute	50	6.96	1.96	7.58	1.92
	Affective Attribute		4.96	2.08	5.58	2.07
	Issue Importance		5.00	1.72	5.38	1.24
Con-environmental group	Substantive Attribute	50	7.24	1.53	6.74	1.93
	Affective Attribute		5.50	1.56	5.02	1.72
	Issue Importance		5.34	1.43	5.30	1.20

As seen in Table 5-1, the directions of the substantive and affective changes for the two groups went in opposite directions. That is, after the exposure to one or the other of the online newspapers, the pro-environment audience showed an increase in the extent of belief in the truthfulness or credibility of global warming effects (from a mean of 6.96 to 7.58), while the con-environmental audience showed a decrease in their belief in the truthfulness or credibility of global warming effects (from a mean of 7.24 to 6.74). At the same time, after the

exposure, the pro-environment audience showed a positive emotional reaction to the “reduction of global warming effects” (from a mean of 4.96 to 5.58), while the con-audience showed a negative emotional reaction (from a mean of 5.50 to 5.02). In the mean time, although there also are changes in the perceived importance of the global warming issue, the changes for both groups (the pro group from a mean of 5.00 to 5.38 and the con group from a mean of 5.34 to 5.30) are relatively smaller than those of the attribute elements of the corresponding groups.

H1: The transfer of the substantive attribute salience.

Hypothesis 1 predicts that the substantive attribute salience of the online newspaper will be transferred to the subjects’ substantive attribute salience. Two paired t-tests were conducted for the pro- and the con-environmental groups. Table 5-2 shows that there was significant substantive attribute salience change [$t(49) = -2.10, p < .05$] after the exposure to the con-environmental online newspaper, and there was marginally significant substantive attribute salience change [$t(49) = 1.95, p < .10$] after the exposure to the pro-environmental online newspaper. Thus, Hypothesis 1 is supported.

H2: The transfer of the affective attribute salience

Hypothesis 2 expects that the affective attribute salience of the online newspaper will be transferred to the subjects’ affective attribute salience. As shown in Table 5-2, the results of the paired t-tests show that, for the pro environmental group, there is a significant affective attribute salience change after the exposure to the

online paper [$t(49) = 2.25, p < .05$]. Meanwhile, there is a marginally significant affective attribute salience change for the con-environmental group [$t(49) = -1.79, p < .10$]. Thus, Hypothesis 2 is supported.

Table 5-2. Results of the paired t-tests on substantive and affective attribute salience

	Attribute	Mean Difference	S.D.	d.f.	t-value
Pro-environmental group	Substantive	.62	2.25	49	1.95 [†]
	Affective	.62	1.95		2.25*
Con-environmental group	Substantive	-.50	1.68	49	-2.10*
	Affective	-.48	1.90		-1.79 [†]

[†] $p < .10$; * $p < .05$

RQ1: Effects of two online newspapers on the attribute salience

Research Question 1 suggested that there would be different attribute agenda-setting effects according to the different message tones. As shown in the descriptive statistics, the direction of the changes for the affective attributes seems to support this proposition. To examine the statistical significance of the proposed relationship in RQ1, a one-way ANOVA was conducted.

Table 5-3. ANOVAs on the changes of affective attribute issue salience

Independent Variable	N	Change of attribute salience (Post – Pre measure)		d.f.	F-test
		Affective			
		Mean	S.D		
Pro-environmental	50	.62	1.95	1	8.18*
Con-environmental	50	-.48	1.90		

* $p < .05$

As shown in Table 5-3, there were significant differences between the pro- and the con-environmental conditions on the transfer of affective attribute salience [$F(1, 48) = 8.18, p < .05$]. The results for the affective attribute change indicated that subjects who were exposed to the pro-environmental online newspaper ($M = .62, S.D. = 1.95$) changed more than were those exposed to the con-environmental one ($M = -.48, S.D. = 1.90$). The results indicate that the different tones of the presentations of the attributes (positive vs. negative) led to significantly different attribute agenda-setting effects.

RQ2a and RQ2b: Second level agenda setting effects on first level agenda setting

The two research questions (RQ2a and RQ2b) were suggested in an attempt to explore whether there were some relationships between the first- and the second-level agenda setting effects. Using a median split on the index scores for the second-level agenda setting effects, the author divided each condition into two groups (high vs. low) for both substantive and affective attributes. Table 5-4 shows that the second-level agenda setting effects have some significant influences on the first-level agenda setting.

More specifically, for subjects who were exposed to the pro-environmental online newspaper, the substantive attribute agenda setting effects failed to influence the first-level agenda setting effects [$F(1, 48) = 1.70, p = .20$]. However, the subjects who showed greater substantive attribute agenda setting

effects after exposure to the con-environmental online newspaper were likely to think that the global warming issue was of greater importance than those who reported less substantive attribute agenda setting effects [$F(1, 48) = 3.42, p < .10$].

Table 5-4. ANOVAs on the association of first- and second-level agenda setting effects

	Second Level Agenda-Setting	N	Change of issue salience (Pre- vs. Post-Exposure)		Sum of Square	d.f.	F-test
	Substantive		Mean	S.D.			
Pro-environmental	Low	25	.23	.87	1.13	1	1.70
	High	25	.53	.75			
Con-environmental	Low	21	-.38	1.24	4.09	1	3.42†
	High	29	.20	.97			
	Affective		Mean	S.D.			
Pro-environmental	Low	26	.16	.91	2.54	1	4.02*
	High	24	.61	.65			
Con-environmental	Low	25	-.43	1.07	7.41	1	6.58*
	High	25	.34	1.05			

† $p < .10$; * $p < .05$

Furthermore, the test found significant influences of the affective attribute agenda setting effects on the first-level agenda setting effects. Specifically, the more the subjects reflected the transfer of the affective attribute salience from either the pro-environmental online newspaper [$F(1, 48) = 4.02, p < .05$] or the con-environmental online newspaper [$F(1, 48) = 6.58, p < .05$], the more they were likely to think that the global warming issue is important.

This seems to indicate that the affective dimension of the attribute agenda has more influence on the first level agenda than the substantive dimension does, regardless of whether the audience was exposed to pro- or con-environmental news stories. The results for the affective dimension are statistically more meaningful ($p < .05$ for both the pro- and con-environmental stories) than the substantive dimension ($p = .20$ and $p < .10$).

CONCLUSION AND DISCUSSION

The results of this study showed that second level agenda setting works continuously in the digital environment. Two different online newspapers were proved to transfer the attribute salience of an issue to the public successfully in the experiment that this study employed. The substantive and affective dimensions of the opposing (pro-environment and con-environment or pro-economy) attributes of an issue (global warming), which were presented independently in the two online newspapers, shaped the viewpoints of the audiences separately exposed to one or the other of the papers. Furthermore, the different directions of the contradictory attribute salience transfer were statistically significant. This result reinforces the argument of the second level agenda-setting proposition.

This study also showed some relationships between the first and the second level agenda-setting functions. Even though the substantive attribute salience transfer of the pro-environment stimuli did not seem to affect the salience

transfer of the global warming issue per se, all the other three attributes (affective attribute salience transfer of the pro-environment stimuli, substantive and affective attribute salience transfers of the con-environment stimuli) affected the issue salience transfer.

These results indicate that, while the contradictory attributes of an issue lead the audience's perception of the issue correspondingly in the direction of the message presentation, both of these attributes seem to boost the audience's perceived issue importance, regardless of the different directions of the presentations. Specifically, the affective dimension seems to have more meaningful influence on the first level agenda setting effects than the substantive dimension does.

Beyond the argument of the salience transfer of the attributes of an issue, however, there are some aspects that need to be discussed further. First, in comparison to some earlier "issue" agenda-setting studies, the statistical explanation of the pro-environment and pro-economy (i.e., con-environment) attributes in this study looks complex. When the study introduced Hypotheses 1 and 2, the author explained some previous issue agenda-setting research, which indicated that the salience of the environment issue is relatively easily transferred from the media to the public, and the salience of the economic issue is barely transferred from the media to the public (Soroka, 2001). When the results of the current study are compared to such arguments, the findings become somewhat

complicated, since the results of the current study indicate that the salience of both the pro-environment and pro-economy “attributes” was transferred successfully from the media to the public.

The disparity of the results between the previous studies and the current study may be based on the different nature of an “issue” and an “attribute.” That is, the previous research referred to here focused mainly on the salience transfer of the “issues” of the environment and the economy, while this study explored the salience transfer of the “attributes” of the environment and the economy for an issue. In short, there may be some different agenda-setting function between the first and second levels, even though the topic is the same. At the same time, such complexity can come from the operationalization of some of the concepts employed in this study. Although the author used the attribute of the economy for the current experiment, it is here mainly related to global warming, which has been frequently reported to be associated with the environment in the news articles. That is, the aspect of the environment is already embedded in the attribute of the economy in this study. That might help the salience transfer of the economy attribute, which is not purely economic, but already mixed with the environmental factor, whose salience was shown to be readily transferable from the media to the public in the previous issue agenda-setting studies. The difference between the experimental settings may cause the disparity in the results, too. The current study was about online media effects, while previous studies

were about traditional media effects. Because just one experiment or study can hardly explain all the aspects of complicated social phenomena, these factors discussed above are worth being studied further in the future.

Secondly, the different influential power of the affective dimension and substantive dimension on the first level agenda setting effects needs to be highlighted again. As mentioned above, Kiouisis et al.'s experiments found that the salience transfer of the substantive attributes influenced the issue salience transfer, which was marginally significant (1999). The influence of the affective dimension on the first level agenda setting was not discussed in their experiment. Interestingly, the current experiment found that the affective attribute salience transfer had a clearer and statistically more significant impact on the first level agenda setting effects than the substantive dimension did. This seems to be a novel finding regarding the relationship between the first level and second level agenda setting effects.

The third discussion point regarding the current study results is the different effects of the agenda-setting function of contradictory attributes on the issue agenda setting. The results showed that both the dimensions (i.e., substantive and affective) of the pro-economy (i.e., con-environment) attribute affected the salience transfer of the global warming issue, while only one of the dimensions of the pro-environment attribute did. This is interesting because global warming is generally known as an issue about the environment (De Jager

et al., 2002). The current study results reveal that the salience of an issue is not only transferred by the attributes supporting the original inclination of the issue but also by the attributes opposing such inclination, or even that the opposing attributes boost the issue salience transfer more effectively.

Unfortunately, the current study could not reveal the concrete and specific reasons why such phenomena occurred but only show the observable facts. However, such observations could direct some further studies on this topic, including the “need for orientation,” which is believed to explain the psychological foundations of the agenda-setting theory (Poindexter et al., 2003; Weaver, 1977). The convergence of the second level agenda-setting study with the two traditional dimensions of the need for orientation – relevance and uncertainty – may be a good project to find such reasons for the differing influence of the attributes on the issue. Specifically, as in Chapter 4 of this dissertation, bringing back the “effort required to attend to the message” – another dimension of the need for orientation that has been relatively understudied for decades – and integrating it with a second level agenda-setting study would seem to work effectively to reveal the psychological function of agenda setting in the digital era, where an abundance of information has led to great changes in the public’s information environment (Barber, 1998; Bimber, 2003).

CHAPTER 6. Priming Aspect of Agenda Setting Effects: Shaping the Evaluative Dimension of Attributes of the Global Warming Issue

INTRODUCTION

In Chapters 4 and 5, we discussed the first and second level agenda setting effects in the digital age. This chapter now mainly deals with the priming aspect of the agenda setting effects, which is relatively a new field in the theory's realm. While the experiment in this chapter explores the priming aspect of the theory, it also attempts to reveal the relationship between the second level agenda setting effects and the priming effects. Specifically, this study explores the attribute salience transfer from online papers to their audience, i.e., second level agenda setting effects (Kiousis et al., 1999; McCombs et al., 2000). At the same time, this study also attempts to determine the agenda setting effects' influence on building the guidelines that people use in forming their opinions, which is conceptualized as the priming effects (Iyengar & Kinder, 1987).

SECOND LEVEL AGENDA SETTING AND PRIMING

Second Level Agenda Setting

While the second level agenda-setting concept has been discussed in Chapter 5, more explanation will be added in this chapter in a somewhat different direction – linking the second level agenda setting effects with priming effects.

As discussed in the earlier chapters, the attribute agenda domain became highlighted with the original framework's convergence with another theoretical

structure, framing (McCombs & Ghanem, 2001). The framing theory emphasizes the choice and depiction of characteristics of certain issues or topics (Tankard et al., 1991), as does second level agenda setting. Despite such similarities, some scholars disagree about putting the second level agenda setting and framing concepts together because they believe that framing has theoretical definitions that are quite different from that of second level agenda setting (Kim et al., 2002; Scheufele, 2000). However, while some strong opinions urge researchers to maintain the distance between the two theories, others even suggest the interchangeable usage of attribute agenda and frames for the purpose of theoretical parsimony (McCombs, 1997; Kioussis et al. 1999, McCombs & Ghanem, 2001; Yioutas & Segvic, 2003). The debate over whether to keep the two theories separate or not is also rooted in an unsettled discussion about ongoing research questions for distinguishing the “applicability-based” framing from “memory-based” agenda setting (Kim et al., 2002; Price & Tewksbury, 1997). However, for this study, which seeks the salience transfer from the media to the audience and its influence on the priming effects, such a debate is not the main goal. Thus, this chapter takes the stance of “theoretical parsimony,” so that it considers the attribute agenda and frame as equivalent concepts. Consequently, it employs the term “second level agenda setting effects” instead of “framing effects,” as in Chapter 5, since this study deals with agenda setting effects.

In the meantime, taking attributes into consideration as an aspect of agenda setting led to a huge leap in terms of theoretical boundaries. With this idea, agenda setting was able to explain media effects as not only telling people “what to think about” but also telling them “how to think about” topics (McCombs et al., 2000). And the idea “to tell how to think about” widened the range of theoretical explanation from attribute agenda setting into the territory of priming, which describes the media’s influence on the audience’s evaluative dimension in connection with the world outside (Iyengar & Kinder, 1987; Kim et al, 2002).

In summary, the focus of the second level or attribute agenda setting research is how certain objects are delineated. More clearly, the research scrutinizes how such depictions made by media are transferred into the public’s minds. And such aspects of attribute agenda setting function touch the realm of priming, the creation of an evaluative structure in the audience’s minds.

Priming

Priming refers to “the process in which the media attend to some issues and not others and thereby alter the standards by which people evaluate” objects in the real world (Severin & Tankard, 2001). This concept shares similar aspects to those of agenda setting theory. Priming focuses on “some” issues, not “others,” selected by the media, as does the agenda setting theory. But priming goes one step further. Not staying at the level of salience transfer, it scrutinizes the media’s role for influencing or altering the audience’s evaluative dimension (Kim et al.,

2002). Iyengar et al. found that the media set the criteria with which people could assess the presidential candidates' abilities (1982), and Iyengar and Kinder formalized this process as priming effects, which set the guidelines that people use for shaping their opinions (1987). While the agenda setting effects explain the salience transfer, the priming function seems to elucidate the media's role as opinion organizers. That is, the agenda setting effects and the priming effects seem to occur simultaneously. Iyengar and Kinder (1987) supported the linkage empirically between the "issue" agenda setting effects and priming function.

However, when priming effects are considered not only at the level of the "issue" agenda setting process but also at the level of the "attribute" agenda setting process, there needs to be more detailed explanation to link these two theories. And such an extension of thoughts (from the link between priming and first level agenda setting to the link between priming and second level agenda setting) might help people understand the nature of media and their effects more clearly.

Although the original priming studies conducted by Iyengar and others suggested some opinion formation function from the issues presented in the media, it has been continuously questioned as to "how people form their opinions on such issues" (Kim et al., 2002). This kind of question seems more fundamental for the formation of opinions. And it is more closely related to "how to think about," which is the core subject of the second level or "attribute" agenda setting, than

“what to think about,” which is the subject of the first level or “issue” agenda setting. That is, the question, which asks about the fundamental reasons or methods of opinion formation through the media presentation, can be answered more appropriately by the second level agenda-setting environment (“how”) than by the first level (“what”).

In the environment of agenda setting studies, it is relatively a new approach to adopt aspects of priming to the basic theoretical agenda setting framework. And the attempts to link second level agenda setting with priming are even newer than that. Among such attempts, Kim et al.’s study on the city of Ithaca, New York, showed the connection between second level agenda setting and priming effects, and found a significant role played by the attributes of an issue in setting audiences’ opinions about an issue (2002). This is further elaboration of Iyengar and Simon’s (1997) description of priming as the extension of agenda setting into the realm of opinion formation.

In view of this, this chapter explores two aspects of the agenda setting theory. The first one is about the effects of “telling people how to think about,” i.e., second level agenda setting, which describes the transfer of attribute salience from the media to the public. At the same time, this study also examines the role of the second level agenda setting effects in shaping people’s evaluative dimension in relation to the object whose attributes are exposed to the audience. Regarding the media environment, this study employs online media, which have

not yet been a usual resource for agenda-setting research. In short, the purpose of the present study is to determine the ‘agenda setting effects’ priming function’ in the new media environment. Specifically, the present study will explore whether the online media set the attribute agenda about an issue among the audience, and, more importantly, whether the issue attributes salient in the media function as significant guidelines for issue evaluation among the audience. For the study, the “global warming” issue was chosen as the object.

ISSUE AND ATTRIBUTES

This chapter uses the environment issue again based on the same reason for Chapter 5, which examined the second level agenda setting effects – this “issue” has been regarded as readily transferable from the media to the public (Soroka, 2001; Soroka 2002). But different from Chapter 5, which explored the transfer of the substantive and affective dimension of the attributes, Chapter 6 attempts to examine the changes of the subject’s perceived salience on the different attributes regardless of their being substantive and/or affective. Because the priming effects are the second part of the study, the attribute agenda setting effects are the necessary condition for the exploration of the priming effects. Examining the second level agenda setting effects of the attributes, the study will measure whether such effects create an impact on the shaping of the evaluative dimension relative to the global warming issue.

For this study, a professional journalist who has been covering environmental issues for more than two years selected the attributes of the global warming issue. Monitoring for two months an online news search engine, *Google News*, he chose five attributes, which were frequently reported in connection with the global warming issue on the Web site. They are the “Crisis of Species (Ecosystem),” “Increased Potential for Flooding (Flood),” “Impact on Industrial Business (Business),” “Effects on the Energy System (Energy),” and “International and/or Provincial Conflict (Conflict).” Detailed features of these attributes will be outlined in the “Method” section.

HYPOTHESES

This study explores the second level agenda setting process connected with various attributes of the global warming issue. Specifically, it examines how the online media presentation of messages affects the salience of the attributes of the issue among the readers. Along with the examination, it also connects the attribute salience transfer to the readers’ overall evaluative dimension on the global warming issue to show potential priming effects. For the study, the following hypotheses were presented:

H1: The attribute salience of the global warming issue presented in the online newspapers will influence the audience’s perceived attribute salience of the issue.

H2: The attribute salience of the global warming issue presented in the online newspapers will be associated with the audience’s evaluative dimension relevant to the issue.

METHODS

The author conducted an experiment to test the hypotheses . For the three week experiment, subjects were divided into three different groups – High Exposure, Medium Exposure, and No Exposure to attributes of the issue. That is, this study's experimental design featured a controlled independent variable (High Exposure vs. Medium Exposure vs. No Exposure condition) with pre- and post-experimental measures for detecting attribute salience transfer and priming effects.

Stimulus Materials

This study employs a simple form of online newspaper. The online papers were delivered to the subjects, who were divided into three groups (High vs. Medium vs. No Exposure), via e-mail every week during the three-week experiment period. That is, each subject had three online newspapers, and, for each online paper, 10 news links were attached, through which the subjects in the study were guided to read the actual news stories.

A critical feature of the experiment was the selection of news articles properly reflecting five different attributes of the global warming issue. As mentioned above, a professional journalist chose the stories. He retrieved 60 news stories for this study from an online news search engine, *Google news*. Half of the stories were about the attributes of the global warming issue, and the other half were stories about random issues other than the target, global warming, issue. They were selected from news stories a week prior to each experimental session.

Based on the selected news articles, three different kinds of online newspapers (High vs. Medium vs. No Exposure) were prepared. Each of the online newspapers had the same format with 10 simple hyperlinks, but a different mixture of stories. The High Exposure newspaper contained only stories about the five attributes of the global warming issue. Half of the stories in the Medium Exposure newspaper were about the five attributes of the global warming issue, and the other half were about other random issues. The No Exposure newspaper had only random stories, which were not related to the global warming issue. Each of the three kinds of online papers (High, Medium and No Exposure) was delivered three times to the subjects in the respective groups. Thus, an individual subject received three online newspapers of the same kind, but the contents of the first, second and third papers were different from each other. (See Table 6-1.) The subjects received the paper every Wednesday for three weeks.

Table 6-1. Online paper delivery

	High Exposure	Medium Exposure	No Exposure
Paper 1	Target Attributes of the Issue Only	Half of the Target Attributes + Half of the Random Issues	Random Issues Only
Paper 2	Target Attributes of the Issue Only	Half of the Target Attributes + Half of the Random Issues	Random Issues Only
Paper 3	Target Attributes of the Issue Only	Half of the Target Attributes + Half of the Random Issues	Random Issues Only

Additionally, to explore the hypotheses, the number of stories related to the individual attributes was manipulated. (See Table 6-2.)

Table 6-2. Frequency of the target attributes exposed to the subjects

	High Exposure	Medium Exposure	No Exposure
Ecosystem	10	5	0
Flood	8	4	0
Business	6	3	0
Energy Policy	4	2	0
Conflict	2	1	0
Total	30	15	0

As seen in Table 6-2, over the three exposure times, the subjects in the “High” group had a total of 10 stories about the attribute of the “Ecosystem,” 8 stories about the “Flood” attribute, 6 stories about the “Business” attribute, 4 stories about the “Energy” attribute, and 2 stories about the “Conflict” attribute. This was executed in such a way that the author could rank-order the attributes in terms of the exposure frequency to the subjects. Thus, over the three-week period, they received 30 stories, all of which were about the attributes of the global warming issue, but the number of stories for each attribute was different from the others. For the same time period, the subjects in the “No” group had 30 random stories, which were not relevant to the global warming issue. The subjects in the “Medium” group had half the number of stories regarding each attribute of the global warming issue, compared to the “High” group. That is, they had 5 stories about the “Ecosystem” attribute, 4 stories about the “Flood” attribute, 3 stories about the “Business” attribute, 2 stories about the “Energy” attribute, and 1 story

about the “Conflict” attribute. All the stories, which were about global warming attributes, for the “Medium” group were included in those for the “High” group. Fifteen other stories, which were the other half of the stories for the “Medium” group, came from the random stories of the “No” group. The stories containing the target attributes were dispersed, so that the stories of the same attribute were not clustered together.

For the “Ecosystem” attribute, the newspaper featured “Yellowstone rodents show effects of global warming”; “Newfoundland razorbills invade murre colonies”; “Birds face global warming disaster”; “Plankton respond to warmer seas”; “Climate Change: Changes in planktonic food web hint at major disruptions in Atlantic”; “New campaign fights to protect tropical reefs”; “Chinese glaciers could be gone in 100 years”; “Coral genetic bank offers for restoring Florida’s reefs”; “Organization to promote environmental study”; and “Delicate ecosystems under assault.”

For the “Flood” attribute, the stories were “India’s water wars: Is god or man to blame”; “More summer storms point to global warming”; “What we think: Natural and not-so-natural disasters”; “Insurers raise the eco-alarm”; “The mild, mild west: Scientist linking dismal sierra snow packs, melting glaciers, to evidence of global warming”; “Global warnings”; “Resources for ODPEM, Met office”; and “Scientists study risk of devastating floods.”

For the “Business” attribute, the stories were “Global warming menaces California wine industry”; “Global warming reaches boardrooms”; “California industry poised to provide world-leading technologies, jobs for cleaner, more efficient vehicles”; “Cinergy plans first series of voluntary environmental programs”; “Global warming creeps up on S.F.: City has plan to cut greenhouse gases”; and “Roche putting the brakes on greenhouse gas emissions with hybrid car pilot study.”

For the “Energy” attribute, the stories were “After wind power, Germany turns to the sun for electricity”; “A solution to global warming”; “PCS says state must get greener on energy”; and “New study finds technology already exists to solve global warming.” For the “Conflict” attribute, the author featured “Blair urged to press Bush to start war on global warming” and “U.S. blocking Arctic report.”

All the stories above were featured in the stimuli for the “High” group, and half of the stories for the individual attributes were used in the stimuli for the “Medium” group. The other half of the stories for the “Medium” group came from the random issues used for the “No” group. For the random issues covered in the “No Exposure” group, the author selected various international, national, business, and entertainment news; including “Bush avoids Issue of Iran, N. Korea on Campaign Trail”; “El Baradei: No deadline for completion of Iraq nuclear probe” “Putin tightens grip on regions and MPs”; “Great Sand Dunes designated a

national park”; “Oprah gives away 276 cars on TV show”; “Sony group agrees to buy MGM”; “London becomes Cape Town”; “Police find embassy bomb clue”; “U.S. deficit at record high with a month left in budget year”; “Italian foreign minister visit Kuwait”; “Iraq remains a contentious campaign issue”; “France, Brazil lead charge for new global anti-poverty campaign”; “Quebec trucker charged in deadly crash”; “Woman shot by police officer”; “Tobacco companies to fight it out in court”; “Jaguar workers plan strike over job cuts”; “Microsoft opens up”; “UK man arrested for stealing Cisco source code”; “Oops, Britney marries again”; “Culkin charged for drug possession”; “Blair admits Iraq intelligence flawed”; “Axe-wielding passenger attacks Norwegian pilots”; “Gotcha! Scientists finally capture their quake”; “Wheaton police investigated theft of high school safe”; “IBM claims supercomputer crown for U.S.”; “ConocoPhillips gets stake in Russia’s giant”; “Microsoft’s Russian carrot”; “DNA fingerprinting is not just for humans”; “Real life Rocky sues Stallone” and “Penn will be the voice of Bob Dylan memoirs.”

Each news story in the online newspapers was clickable to find the full story.

Experimental Procedures

The pre-experimental questionnaire was administered a week before the first experiment as a form of online survey, and the post-experimental questionnaire was completed a week after the third, final exposure. For the pre-experimental

survey, originally 166 freshmen majoring in journalism from a large southwestern university were recruited by e-mail to participate in the study to earn extra course credit. They completed the questionnaire attached to the e-mail, which asked about their perceived salience of the attributes of the global warming issue by rank-ordering them. The answers were used to set the baseline figures to later test the second level agenda setting effects. The questionnaire also asked opinions on support for the reduction of global warming effects (i.e., judgment whether to support the efforts to reduce global warming effects or not) to set the baseline figures to later test the priming effects. Finally, the questionnaire asked their beliefs about each of the five attributes of the global warming issue (i.e., the likelihood of the five attributes being affected by global warming effects) to set the baseline figures to later test the relation between the attribute agenda setting effects and priming function.

For the three weeks after the pre-experimental survey (pre-survey), subjects were asked to read every news story and write a one-sentence summary for each story. The goal of the task was to get the subjects to read the stories carefully. However, during the three weeks of the experimental procedure, 59 subjects were unable to complete all the tasks.

A week after the final exposure, the 107 subjects who had completed the pre-survey and the three experimental tasks were asked to complete the post-experimental survey (post-survey). Among the 107 participants, 12 provided

incomplete data, which left 95 subjects in the data pool. While the original participants had been randomly assigned to each of the three conditions – High vs. Medium vs. No Exposure –, each group had a different number of participants left because of the dropouts and incomplete data - High (30), Medium (34) and No Exposure (31). The ages of the subjects left in the final data pool ranged from 17 to 27, with a mean age of 19. Eventually, 18 males and 77 females completed the post-survey, which consisted of the same questionnaire as in the pre-survey. After the post-survey, subjects were thanked and debriefed.

Measure

In order to examine the proposed hypotheses, three kinds of measurements were conducted in both the pre- and post-experimental questionnaires.

Attribute Salience Transfer: Five different attributes of the global warming issue were chosen to show the issue's various characteristics. Subjects were asked to rank-order the five different attributes according to their relative importance both before and after the experiments. The question was, "Regarding the global warming issue, which do you think is most important among the ecosystem, flood, industrial business, energy policy and regional conflict?" Subjects were asked to rank the attributes from 1 (most important) to 5 (least important). Then, the rank order correlation between the frequency of attribute exposure and the subjects' perceived salience of the attributes, as expressed in their pre- and post-exposure survey answers, was calculated.

Priming Effects: For the evaluative dimension of the global warming issue, the levels of support for the efforts to reduce the global warming effects were measured. The author assessed possible support on a nine-point Likert type scale by asking the subjects whether they personally support or oppose these efforts. Specifically, the subjects were asked to answer the question (“Do you support or oppose the efforts to reduce the GlobalW arming effects?”) anchored by “extremely oppose” and “extremely support.”

Association of Attribute Agenda Setting and Priming: To explore the influence of attribute salience transfer on the priming effects, which were detected from the question addressed above, subjects were also asked their opinions on each of the five attributes of the global warming issue: “Ecosystem,” “Flood,” “Business,” “Energy,” and “Conflict.” The opinions were measured on nine-point Likert-type scales anchored by “strongly disagree” and “strongly agree” as to “how likely it was for each attribute to happen as a consequence of the global warming effects.” The changes between the pre- and post-survey were calculated for the evaluative dimension (dependent variable) and for opinions on each of the five attributes (independent variables), and then a regression analysis was conducted.

RESULTS

Attribute Agenda Setting

Table 6-3 shows the subjects’ opinions on each of the five attributes, which were measured by their rank order. As explained above, subjects were asked to rank the

five attributes from 1 (most important) to 5 (least important). All the rankings for each of the attributes were simply added to reveal the overall opinions of the subjects in the individual groups. Thus, the smaller the number in the table is, the more important the subjects think the attribute is, and vice versa. The subjects' opinions were measured by both pre- and post-surveys. The far left column in Table 6-3 contains the attributes, in the order of their exposure frequency to the subjects of "High" and "Medium" groups.

Table 6-3. Perceived importance of the attributes before and after the experiments

	High Exposure				Medium Exposure				No Exposure			
	PRE		POST		PRE		POST		PRE		POST	
	N	R	N	R	N	R	N	R	N	R	N	R
Ecosystem	45	1	40	1	55	1	54	1	42	1	40	1
Flood	95	3	78	2	111	3	91	2	91	3	94	3
Business	100	4	116	4	119	4	127	4	118	4	122	5
Energy	81	2	86	3	91	2	95	3	88	2	90	2
Conflict	129	5	130	5	134	5	143	5	126	5	119	4

N = Accumulated Number of Each Attribute's Rank Given by the Subjects

R = Rank of Importance Based on "N"

As seen in Table 6-3, the rank orders of the five attributes in the pre-survey are exactly the same among the groups. In all groups, the ecosystem was thought to be the most important attribute of the global warming issue; energy, the second most important; flood, the third; business, the fourth; and conflict, the fifth. In short, there was no difference among the groups as to their thinking about the relative importance of those attributes, before the 'layered' exposure to the attributes.

Additionally, before the exposure to the stimuli, the rank orders of the attributes in all three groups were not significantly correlated to the rank order of what would be the frequency of the attributes exposed to the subjects. Table 6-4 shows that the rank-order correlation between the frequency of the attributes exposed to the subjects through the experiments and the perceived importance of the attributes among the subjects before the experiments was statistically insignificant (Spearman's $\rho = .700$, $p = .188$, $N = 5$).

After the exposure to the differentiated news content, however, the subjects in all groups changed their perceived importance of the attributes. Notably, the rank order of the High and Medium Exposure groups went in the same direction, but that of the No Exposure group went a different way. More importantly, the rank-order correlation between the frequency of the attributes exposed to the subjects and the perceived importance of the attributes among the subjects in the High and Medium groups became statistically significant (Spearman's $\rho = .900$, $p = .037$, $N = 5$). (See Table 6-4.)

Table 6-4. Rank order correlation between the frequencies of the attributes exposed to the subjects and their perceived importance of attributes

	High Exposure		Medium Exposure		No Exposure	
	PRE	POST	PRE	POST	PRE	POST
Spearman's rho	.700	.900*	.700	.900*	.700	.500

* $p < .05$

In the meantime, the rank-order correlation between the exposure frequency and the rankings by the subjects in the No Exposure group declined (Spearman's $\rho = .500$, $p = .391$, $N = 5$). (See Table 6-4.)

The results of the rank-order correlation showed that the exposure of the attributes of the global warming issue to the subjects led to attribute salience transfer from the online newspapers to the audience. Specifically, in contrast to the results of the “No Exposure” group, which showed unsystematic changes in perceived attribute importance, the systematic changes of the “High” and “Medium” groups are positively related to the frequency of the exposure to the attributes in the online papers. Thus, the hypothesis of the attribute agenda setting effects was supported. Although the reason for the changes in the “No Exposure” subjects' perceived importance of the attributes is not clearly explained here, it does not seem to harm the results supporting the hypothesis, since the change in the “No Exposure” group does not falsify the hypothesis.

Priming

The hypothesis was examined by a set of paired-samples t-tests (priming effects) and regression analyses (relation between attribute agenda setting and priming). First, Table 6-5 shows the descriptive statistics of the primary dependent variable.

As seen in Table 6-5, the directions of the changes in the priming effects for all three groups were positive. The mean of the “High Exposure” group moved from 7.70 to 8.33; the mean of the “Medium Exposure” group moved from 7.56

to 8.41; and the mean of the “No Exposure” group moved from 7.19 to 7.45. Despite their movement in the same direction, there seemed to be differences among the groups. While the amount of the mean change for the “Medium Exposure (.85)” group is greater than that for the “High Exposure (.63)” group, both the changes are much larger than that for the “No Exposure (.26)” group. In addition, while the standard deviations of both the “High” and “Medium” groups decreased, that of the “No” group increased slightly. The results seem to indicate that the subjects exposed to the target attributes of the global warming issue were more likely to change their evaluative dimensions on the issue than those who were not exposed to the attributes.

Table 6-5. Descriptive statistics of priming

IV	DV	N	Pre-Survey		Post-Survey	
			Mean	S.D.	Mean	S.D.
High Exposure	Priming (Support the Efforts to Reduce Global Warming Effects)	30	7.70	1.21	8.33	.96
Medium Exposure		34	7.56	1.50	8.41	.86
No Exposure		31	7.19	1.35	7.45	1.36

To determine whether such indications are statistically supported, paired-sample t-tests were conducted for the “High” “Medium” and “No Exposure” groups, respectively, and reported in Table 6-6.

The results showed priming effects for the subjects who were exposed to the target attributes, while no such effects were detected for the subjects who were

not exposed to the attributes. Table 6-6 shows that there was a statistically significant change in the subjects' evaluative dimension after the "High exposure to the target attributes in the online newspaper [$t(29) = 3.357, p < .01$], and after the "Medium" exposure to the target attributes in the online newspaper [$t(33) = 4.294, p < .01$]. But the "No Exposure" group did not show such statistically significant effects [$t(30) = 1.215, p = .234$]. The results indicated that the subjects who were exposed to the attributes of the global warming issue became more likely to support the efforts to reduce global warming effects.

Table 6-6. Results of the paired t-tests on priming effects

		Mean Difference	S.D.	D.F.	T-value
High Exposure		.63	1.03	29	3.357**
Medium Exposure	Priming Effects	.85	1.16	33	4.294**
No Exposure		.26	1.18	30	1.215

** $p < .01$

Association of Attribute Agenda Setting and Priming

Although the paired t-tests above showed priming effects for the "High and "Medium" groups, it was not clear whether these effects were from the influence of attribute salience transfer or not. That is, while the "High and "Medium" subjects were exposed to the five different attributes, since the issue of global warming itself was exposed simultaneously, the priming effects detected above may be the results of issue salience transfer instead of attribute salience transfer.

To determine if the issue attributes salient in the online media play significant roles as determinants of issue evaluations, the author used a regression model.

The model includes the subjects' opinion changes on the five attributes of the global warming issue before and after the experiments, in predicting the degree of change for supporting the efforts to reduce global warming effects before and after the experiments. The regression model was applied to the two groups – “High” and “Medium” – once combined and once separately. Since the “No Exposure” group did not show any attribute agenda setting effects (rank-order correlation) and priming effects (t-tests), it was excluded from the regression analysis.

Table 6-7. Issue attributes predicting support for the efforts to reduce global warming effects

	High + Medium (N = 68)	High Exposure (N = 30)	Medium Exposure (N = 34)
Ecosystem	.247* (.101)	.118 (.141)	.473** (.167)
Flood	.147† (.087)	.076† (.122)	.065 (.140)
Business	.132 (.094)	.235 (.140)	.054 (.163)
Energy	-.063 (.100)	.054 (.131)	-.091 (.182)
Conflict	-.103 (.069)	-.157 (.123)	-.067 (.087)
R-Square	.220*	.251	.328*

Note: The entries are unstandardized regression coefficients with standard errors in parentheses.

† $p < .10$, * $p < .05$, ** $p < .01$

As seen in Table 6-7, the model efficiently explains the priming effects. That is, the set of five attributes can predict the priming effects ($R^2 = .220$, $p < .05$) for the combined group of “High” and “Medium” exposures, and specifically among the

subjects who were exposed to the attributes, the “Ecosystem” attribute (.247, $p < .05$) worked as a significant predictor in predicting support for the efforts to reduce the effects of global warming. Additionally, the “Flood” attribute (.147, $p < .10$) worked as a “marginally” significant predictor for the priming effects. Thus, we can conclude that attribute salience transfer is highly associated with priming effects.

However, when we applied the model to the exposed groups separately, we found somewhat complicated results. As seen in the table, only the “Medium” group showed that the model could explain the priming effects efficiently. That is, the set of five attributes can predict the priming effects ($R^2 = .328$, $p < .05$) for the “Medium” group, and, specifically, the “Ecosystem” attribute (.473, $p < .01$) worked as a significant predictor in predicting support for the efforts to reduce the effects of global warming. But the model did not produce clear support for the “High” group in the attributes’ ability to predict the priming effects. Even though the “Flood” attribute (.076, $p < .10$) worked as a ‘marginally’ significant predictor, it was not strongly meaningful, since the model does not support the overall relationship between the set of predictors and the priming effects.

In view of the results, Table 6-7 indicates that, although attribute salience transfer influences priming effects, there may be a difference as to the degree or range of the impact, based on the amount of exposure or mixture of the news content.

Thus, the overall results shown in Table 6-6 and Table 6-7 suggest that the three different groups of subjects (High, Medium and No Exposure) have significantly different sets of determinants for their evaluations on the global warming issue. In sum, the research findings provided limited support for the idea that online media's issue attribute salience will become a significant factor determining the issue evaluations among the audience. As is the case of the conventional media featured in Kim et al.'s study, online media can also "influence the importance of particular attributes as dimensions of issue evaluation" (2002).

CONCLUSION AND DISCUSSION

The results of this study showed that the second level agenda setting and priming effects of the media work continuously in the digital environment. The online papers with issue attributes employed in the study successfully transferred the attribute salience to the audience. Additionally, while the study also found priming effects, some statistical tests showed that the priming effects detected in the study were highly associated with the second level agenda setting effects.

Beyond the argument of the salience transfer of the attributes of an issue in online newspapers and its influence on the priming effects, however, there are some aspects that need to be discussed further.

Although the study found the second level agenda setting effects' influence on the priming effects, it did not explain all the complicated details of

the impact. That is, we would think that the “High Exposure group” might exhibit greater priming effects and greater influence of the second level agenda setting on the priming effects, based on common sense. But the study results showed the opposite, and, unfortunately, they did not reveal the concrete and specific reasons why such phenomena occurred; they only showed the observable facts. The disparity between common sense and the study results may be rooted in the complex nature of human psychology and media use.

As a matter of fact, this chapter’s experiment is not the only case to show such complex results. Lopez-Escobar et al.’s Spanish local election study also revealed that the participants exposed to ‘some’ of the political information showed more ‘affective attribute’ agenda setting effects than those exposed to ‘all’ the political information (McCombs, 2004). Since the results of their study and this chapter’s experiment clearly distinguished the difference of agenda setting effects between ‘exposure’ and ‘no exposure’ but showed complicated results for ‘high exposure’ and ‘medium exposure,’ they seem to give a very interesting suggestion: Agenda setting effects, especially in terms of attribute agenda, which are supposed to influence the audience’s semantic or affective perception, are not monotonously grounded in the simple frequency of exposure but also on some other factors like the audience’s psychological status (Ha, 2004). In particular, given that Lopez-Escobar et al.’s study was based on the traditional media setting and this chapter’s experiment was rooted in the online media

environment, such a complex nature can be interpreted as consistent regardless of traditional or online media environment. However, because just one or two studies can hardly explain all the aspects of complicated psychological or social phenomena, the factors discussed above are worth being studied further in the future.

Specifically, such observations could direct some further studies on this topic, including the “need for orientation” (McCombs and Weaver, 1973; Poindexter et al., 2003; Weaver, 1977; Weaver, 1980), as suggested in the ‘Conclusion and Discussion’ section of Chapter 5. Furthermore, the effort to discover such detailed aspects of the agenda setting and priming effects can be incorporated with some other theoretical frameworks in communication studies including uses and gratification (Blumler & McQuail, 1969; Katz et al., 1973; Katz, 1996; Zillmann & Bryant, 1985). Since the uses and gratification theory posits people’s active learning from media content by seeking meaning for themselves, the convergence of the agenda setting and the uses and gratification theories could expedite the finding of the specific details of the media effects, including the phenomena observed but not explained clearly in the current study.

CHAPTER 7. DISCUSSION

Using online newspapers as stimuli, all the three experiments presented in this dissertation supported the agenda setting premises. This indicates that agenda setting theory continues to be effective in the digital media environment.

The results of the first experiment in Chapter 4 supported the basic principle of agenda-setting theory in the digital era, which is that the online newspaper's issue salience was transferred to subjects' issue salience. At the same time, the three sub-dimensions of the need for orientation – personal involvement (a modified concept of 'relevance'), knowledge (a modified concept of 'uncertainty') and effort required to attend to the message – played significant roles in the agenda-setting process. While personal involvement and knowledge, which are the two related conventional need for orientation components, worked in the way the original need for orientation studies suggested, effort, which was reintroduced to the need for orientation conceptualization, showed moderating power for the agenda setting effects, producing a significant interaction. These results were supported with ratio and continuous scale data, which are more vigorous and methodologically sophisticated than ordinal data employed in most of the previous agenda setting and need for orientation studies (Weaver, 1977).

The experiment with second level agenda setting effects based on the online newspapers in Chapter 5 also sustained another aspect of agenda setting theory. Two different online newspapers transferred the attribute salience of an

issue to the public successfully. That is both the substantive and affective dimensions of the opposing (pro-environment and con-environment or pro-economy) attributes of an issue (global warming) shaped the viewpoints of the audiences separately exposed to one or the other of the papers. Additionally, the experiment revealed the second level agenda setting effects' influence on the first level agenda setting effects. Although the reasons for the seemingly complicated results were not fully explained by this experiment and should be studied further, such findings do support the second level agenda setting principle rooted in the digital media.

While the experiment in Chapter 6 again demonstrated the existence of second level agenda setting effects in the new media environment with a different methodological approach, it also found priming effects. Moreover, the experiment attested to the high degree of association between the second level agenda setting effects and the priming effects. Although some complex results call for more detailed explanation, the agenda setting premise and its priming aspects were successfully supported by the experiment.

Beyond the replication of agenda setting effects in the digital age found in the three experiments in the dissertation, there are some aspects that need to be discussed further. For the rest of this chapter, limitations of the current research and suggestions for future research regarding agenda setting effects in the digital age will be discussed.

Interactivity

As noted, all the experiments in this dissertation used online newspapers as stimuli. While the fact that the newspapers were not the true editions but ones artificially created for the specific experiments easily can be excused for the purpose of detecting direct causality, the ‘interactivity’ function that was lacking in all the experiments needs to be clarified further. None of the experiments in the dissertation asked the subjects to “navigate” or “surf” the stimuli in a way that they might want, but rather asked them specifically to “click” on the given hyperlinks and “read” the stories attached to the links. In a sense, this may challenge the main goal of this research to seek online media effects, since it may exclude the “navigation” factor, one of the important “interactivity” features in the online world (Pavlik & McIntosh, 2004).

However, interactivity is a variously defined (Tremayne & Dunwoody, 2001). According to McMillan, human-computer interactivity, which can be related to the focal point of this dissertation, is largely categorized into three main approaches (1999). The first approach focuses on the effects of computer use on individual behaviors (Hawkins & Pingree, 1997; Salomon, 1990). The second approach, which is called the structural approach, is based on the features of the communication channels, the degree of interaction that the media innately have (Kipper 1991; Newhagen, 1997). The third approach is a “process-related construct about communication” that requires mutual reaction between parties

involved in a meaningful communication process (Rafaeli & Sudweeks, 1997). Tremayne and Dunwoody summarized these three categories of human-computer interactivity and gave some examples for each category: cognitive effects of computer use for the first approach; differentiation of media for the second approach by putting conventional media like newspapers at the low end and relatively new media like computer games at the high end based on an interactive scale; and online discussion groups for the third approach (2001).

If we apply the term ‘navigation’ to these conceptualizations of interactivity, we find that navigation is one of the most apparent functions in computer use and online news reading. ‘Navigation’ generally refers to an exploration and retrieval of information among possibilities through a selection process for what the users want (Rost, 2002). Through the media rooted in the higher levels of responsiveness, the navigation function can induce cognitive effects and subsequently meaningful reactions between the message senders and receivers.

In light of these detailed studies of interactivity and navigation in human-computer relations, the fact that the current dissertation does not include or elaborate upon aspects of the interactivity and navigation functions may hurt the credibility of the study. That is, this dissertation cannot speak of the agenda setting power of the online newspaper per se because the study did not measure

the audience's interactivity and navigation functions. It is possible that these functions could be crucial for the media to set the public's agenda.

Some scholars, however, note that the term "interactivity," which embraces the "navigation" function, can be interpreted in other ways (Manovich, 2001). While some equate interactivity with greater involvement by the Internet user, others consider interactivity to include even the click of a computer mouse to open an e-mail or a choice of TV channels or newspapers and their contents. While scholars studying interactivity have not reached a clear consensus about interactivity, such diverse interpretations of interactivity or navigation can lead some people to believe that we cannot think of online media effects without a certain interaction. It can also let others think that even just opening an online newspaper on a computer screen or delivered via e-mail on the computer screen is a kind of interactivity (Tremayne & Dunwoody, 2001). The current dissertation followed the latter interpretation and proceeded as though the subjects who looked at the screens were subscribers of the online newspapers delivered via e-mail.

In fact, proceeding in this manner was due largely to the difficulties in finding regular online newspaper subscribers. While the Internet has blossomed and rapidly developed from the mid-1990s, we have not yet observed many subscribers for one specific online newspaper. Many online users jump between various online media to find news (The Pew Research Center, 2004). As

explained in Chapter 3 of this dissertation, content analysis of specific online media and surveys of the general public may result in a conclusion that cannot appropriately elucidate the effects of other possible extraneous variables like interpersonal communication, effects of conventional media, and even effects of other online media that are not included in the content analysis. Thus, by creating these online papers and their “assumed” subscribers in an experimental setting, this study attempted to show in a controlled setting the potential for an online newspaper’s effects. Considering this study as an experiment to test the “possibility” of an online newspaper’s agenda setting effects, we can say that we witness the prospective power of such effects in the study results. If the online media have good strategies (e.g., hypertext editing) to hold the audience’s interest in an agenda, they can potentially wield as much agenda setting power as traditional media currently do.

Although the realm of interactivity is an area which should be studied further in conjunction with media effects, including agenda setting effects in the digital age, the main focus of the current dissertation does not mainly deal with such an aspect, since the author believes that we are living in a transitional world in terms of media and communication technologies that are not as of yet firmly settled down. Again, it seeks to know potential media effects, which could blossom given certain conditions that may be met in the near future.

Actually, this dissertation could stimulate researchers to find some subscribers with high fidelity for just one online media and trace their interactivity functions. That is, after exposing the online media to the subscribers for a given period of time, researchers may examine their clicking logs and study their perceived importance of the issues or attributes presented in the online media. Some studies already attempted to examine agenda setting effects in an experimental setting by using Internet log tracking and found some indirect link between the online media agenda and the audience agenda (Seo et al., 2004). That is, the online agenda setting effects does not mainly depend upon the naïve issue exposure but the audience selective attention to the issues, and such selectivity can modify the degree of audience's exposure to the issue, which, in turn, generate more agenda setting effects. Even though their study faced some limitations because of its artificiality since it was based on restricted conditions, a combination of the methodology of the current dissertation and that of such Internet log-based studies may produce results that may be closer to the actual online news environment.

Application of Agenda Setting Theory's Phases to the New Media Environment

As Schudson noted, new technologies broaden the capability of news reporting and expand the boundaries of academic studies on journalism and

communications (1995). The Internet, the most recent development in communication history, widened such realms as well.

Widespread by the middle of the 1990s, the Internet opened the door to a new experience of communications. It not only helped ordinary individuals communicate with each other more easily but also broaden the research area. Agenda setting is not an exception to this benefit. We have seen some progress in agenda setting research, which produced meaningful observations related to the new technology. Some studies supported online media's agenda setting role (Wang, 2002). And others found different agenda setting effects between the traditional and online media (Althaus & Tewksbury, 2002).

As explained in the introductory chapter of this dissertation, since the studies were limited to the first level agenda setting phase, the opportunity existed to extend the scope to other phases including the second level, need for orientation studies, and priming effects. This dissertation is one such attempt. And such extensions can encompass new phenomena, which might have not been observed in the studies focusing on the traditional media. For instance, we may find some issues in the online media, which have not attracted the traditional media's eyes.

Even though it was not developed in the current dissertation, the research about intermedia agenda setting effects is another big challenge in the new media settings. Expanding the scope of the intermedia agenda setting effects detected

among the traditional media to salience transfer among ‘online’ media, we may find similar or possibly different trends in intermedia influence compared to that of the traditional media. Regardless of whether it is similar to or different from the effects of the traditional media, such an attempt can broaden our understanding of the media system in the digital era.

Need for Orientation and Uses and Gratification

The current dissertation reconceptualized need for orientation, the psychological backbone of agenda setting effects, by bringing back the ‘effort required to attend to the media messages,’ which has long been understudied, in order to better understand the agenda setting function in the digital age. With the knowledge obtained in the experiments about the roles of personal involvement, knowledge, and effort required to attend to the message in hand, the program of research can move forward into sequential, longitudinal experiments as well as field studies mapping the role of need for orientation in the agenda-setting process, and we can further explore these concepts with other theoretical frameworks in the communication studies. For instance, regarding active engagement in information seeking, all three components of need for orientation can be studied in the context of uses and gratification (Blumler & McQuail, 1969; McQuail et al., 1972; Katz et al., 1973; Katz et al., 1974; Katz, 1996), since the theory posits people’s active learning from the media content by seeking the meaning for themselves. In

particular, information abundance in the digital age highlights the information-seeking aspects of uses and gratification theory.

The uses and gratification theory, which elaborated the audience's psychological response to media content, began with a simple thought. Audiences are not always passive. Elihu Katz, one of the leading scholars of this theory, stated this idea clearly by turning the then-fundamental question of communication "What do the media do to people" into "What do people do with the media?" (Severn & Tankard, 2001) In short, it is about deliberate choice or selective use by the audience or users of media content. Supporters of the idea subsequently developed the framework into specific dimensions of media use such as diversion, personal relationships, personal identities or individual psychology, and surveillance (McQuail et al., 1972). These uses of media are highly related to the two main dimensions of the need for orientation, relevance and uncertainty, which have explained the magnitude of media effects. Specifically, relevance has been often regarded as a concept similar to personal involvement, which was rooted in personal identities and individual psychology (McCombs, 1999). "Uncertainty" also shares some commonalities with surveillance. Some knowledge structures or schemata of individuals can affect both the need for orientation and the "uses and dependency model," a revised version of uses and gratification, which places individuals within societal systems that help shape their needs (Rubin & Windahl, 1986). The individual's selection

of message content featured in both the theories may expand understandings of the nature of media effects.

At the same time, the uses and gratification theory is being re-shaped after the emergence of the Internet, as is agenda setting theory. Chang (1998) cited immediacy (knowing something right away) and stability as the most important factors of uses and gratification in the Internet era. Again in linking these ideas to the need for orientation concept, we could discover new communication trends and media effects. The “efforts required to attend to media content,” the third sub-dimension of the need for orientation, which has been disregarded for decades, fits well with the uses and gratification approach, and they can in conjunction be a good trigger to further understanding media effects and the audience in this complicated world of communication.

Audience Studies in Conjunction with Alternative Paradigm

While touted as one of the most significant concepts in communication theory, agenda setting effects theory has some disadvantages that afflict most dominant paradigm communication studies. As scholars of the cultural and critical orientation criticize the whole dominant paradigm, agenda setting research does not seem to fully encompass social structure in its theoretical development. Specifically, the audience’s psychology mirroring their cultural surroundings has not yet been fully explored in terms of the agenda setting process.

The nature of “audience” in mass communication studies is conceptualized in various ways – sometimes simply (e.g., the object of “to whom” [Lasswell, 1948]) or sometimes in a complicated fashion (e.g., according to nine categories – encoded, analytic, transcendent empirical, aggregate, surrogate, situated, strategic, engaged, and emergent audience [Anderson, 1997]). While the origins and attributions of “audience activity” can be studied from diverse angles, two main paradigms are largely distinguished – the empirical/psychological perspective, where the agenda setting effects reside, and critical/cultural perspective. Even within either paradigm, audience activity is interpreted variously, because of the different approaches to defining the major characteristics of human communication connected to mass media content – selection of, attention to, interpretation or comprehension of and response to content.

While Gitlin (1978) discussed the ‘dominant’ paradigm derogatorily for its lack of scrutiny about detailed and complicated human nature, most audience studies in this paradigm are believed to have successfully explained audience attitudes and behavior in a ‘grand’ structure of mass communication process (Severin & Tankard, 2001). Specifically, mainstream American journalism studies and communication research revolving around audience attitude and behavior were built upon the debate over the measured degree of relative activeness (Katz et al., 1973; Klapper, 1960; Lazarsfeld et al., 1944; Lazarsfeld &

Merton, 1948) and passiveness (Lasswell, 1927; Shannon & Weaver, 1949; Kubey, 1996).

However, many pointed out that dominant paradigm scholars did not take some ‘detailed’ structural phenomena into account as much as the alternative paradigm scholars, who take a more ideological stance toward analyzing communication phenomena by interpreting it in the context of the social structure, through qualitative and ethnographic methods (Power et al., 2002). Although scholars in the alternative paradigm take different approaches to explaining the communication process from those in the dominant paradigm, they also have distinguished the active (Ang, 1982; Ang, 1997; Hall, 1980; Morley, 1992; Morley, 1997) and passive audience (Adorno, 1976; Gitlin, 1985; Habermas, 1962/1989; Horkheimer & Adorno, 1944/1972; Marcuse, 1964) based on viewpoints rooted in detailed observation or field studies.

Seeing these variant interpretations about the complicated nature of audience, McQuail introduced Mill’s concept of the mass society (1997/2000) with its paradoxical combination of “discursive formation” (Foucault, 1972) and “monolithic mass” (Curran et al., 1982/1995). That is, according to the concept of mass society encompassing the phenomena of industrialization and urbanization, the atomized citizens who resulted from such phenomena were exposed to the media presentation, and, in turn, they either helplessly absorbed the media content or aggressively interpreted the content. And now, the emergence of the Internet

further the diversity of the nature of the audience even to the level of not only being active in thinking but also in participation. That is, they are active not only in the selection of content, attention to content, and the comprehension of content, but also in involvement in and response to content (Montgomery, 1986; Sampedro, 2000).

Agenda setting effects studies can collaborate with other approaches in the study of these phenomena. While sustaining the main quantitative methodological approach, it can develop these variables with the help of ethnographic or qualitative views. Some works related to the digital divide can help the agenda setting effects studies to expand the explanatory power in the digital age, since they do not only include the mere demographic factors, but also some aspects of new social capital theory in their studies (Clement & Shade, 2000; Compaine, 2002; Dijk & Hacker, 2003; Shade, 2002; Straubhaar et al., forthcoming), which many recent dominant paradigm theories including agenda setting effects disregard intentionally or unintentionally. In doing so, research can more clearly elaborate media effects in the digital age. In other words, the agenda setting research now suggests cooperative work between the dominant and critical/cultural paradigms.

The audience research suggested above could play a significant role in linking agenda setting studies with the cultural and/or critical paradigm. Agenda setting studies and the alternative paradigm could share commonalities based on

aspects of audience studies, which are largely based upon the ‘activeness and passiveness’ of mass media message interpretation.

These suggestions in combination with the results of the experiments in the current dissertation suggest that the new media offers a rich opportunity to expand our theoretical horizons. The author hopes this dissertation can ignite the potential for new theoretical developments.

APPENDIX 1 – Online Papers




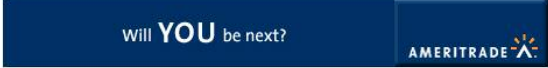

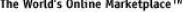

1-1. Control Group Newspaper Web Site for Chapter 4



1-2. Experimental Group Newspaper Web Site for Chapter 4




1-3. Pro-Environmental Online Newspaper for Chapter 5

Networks News | Business | Local | Health | Technology | Opinion | Travel | Community

Global warming kills 160,000 a year



Scientists Warned 'side-effects' of climate change

Global warming kills about 160,000 people through its effects every year, scientists have warned. And the numbers dying from "side-effects" of climate change, such as malaria and malnutrition, could almost double by 2020, they say. [MORE NEWS](#)

Global warming threatens alpine plants
Melting glaciers are spectacular indicators of climate change, but when it comes to biodiversity in the Alps, scientists are more concerned about the fate of fragile mosses and flowers. The effect of global warming on alpine vegetation was one of the main topics discussed at a recent climate conference in Grindelwald. [MORE NEWS](#)

Western governors join to fight global warming
The governors of California, Washington and Oregon, accusing the Bush administration of "foot-dragging" in the fight against global warming, announced Monday they plan to develop a joint strategy to reduce pollution. [MORE NEWS](#)

Climate victims 'are refugees'
People forced to flee by climate change or other disasters caused by human activities deserve recognition as refugees, a UK campaign group argues. It says people affected by rising temperatures should be given a special status as "environmental refugees". [MORE NEWS](#)

Polluters Rally to Ratify Kyoto Pact
Many Russian industrial giants have joined forces with environmental groups from all over the world to lobby for ratification of the Kyoto Protocol. The Kyoto Protocol is an international treaty that aims to combat global warming by requiring countries to reduce their greenhouse gas emissions. [MORE NEWS](#)

Oceans' acidity worries experts
Rising carbon dioxide levels are increasing the acidity of the world's oceans more rapidly than any time since the age of dinosaurs -- adding a worrisome new element to the debate over global environmental change. Acid rain has long been recognized as a threat to forests, lakes and streams, but a new report, published Wednesday in the British Journal Nature, is the first to raise a flag over the prospect of a more acidic ocean. [MORE NEWS](#)

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- Readers' Opinions

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- Travel
- Texas Guide
- Dining & Wine
- Home & Garden
- Fashion & Style
- Crossword Games
- Cartoons
- Magazine
- Week in Review
- Multimedia
- Learning Network

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- Classifieds
- College
- Book a Trip
- Personals
- Theater Tickets
- TD Store
- TD Mobile
- About TDigital
- Jobs at TDigital
- Online Media Kit
- Our Advertisers

Shop smarter and faster.

select shopper
statesman.com/shopping

\$29
Eye Exam
for glasses
NORTHCROSS OPTICAL

We guarantee the lowest price in town!
A&B TV
SINCE 1967

WEDDING REGISTRY
FOLEY'S

Shop smarter and faster.

select shopper
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1-4. Con-Environmental Online Newspaper for Chapter 5




The Texas Daily

News on the Web



The World's Online Marketplace™



Get \$50 when you transfer to Ameritrade. Plus get 30 commission-free trades.



Network: News | Business | Local | Health | Technology | Opinion | Travel | Community



Earth Greening Rapidly Since 1980



42 percent of observed increase in the Amazon rain forest

Something remarkable happened between 1980 and 2000. Researchers from a variety of institutions published a study, funded by NASA and the Department of Energy, in the June 6 issue of Science that found that, "Global changes in climate have eased several critical climatic constraints to plant growth, such that net primary production increased 6% ... globally. [MORE NEWS](#)

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Classifieds
College
Book a Trip
Personals
Theater Tickets
TD Store
TD Mobile
About TDigital
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McCain-Lieberman Will Be Costly, Energy Department Warns
The U.S. Department of Energy's Energy Information Administration (EIA) has released an analysis of the Climate Stewardship Act of 2003, sponsored by Senators John McCain (R-Arizona) and Joseph Lieberman (D-Connecticut). [<MORE NEWS>](#)




Russia Puts Global Climate Pact in Doubt
MOSCOW - A senior adviser to President Vladimir Putin outlined strong reservations Tuesday about ratifying the Kyoto Protocol, saying the pact to limit greenhouse gas emissions is not sufficiently grounded in science and would harm Russia's economic growth. [<MORE NEWS>](#)

Bush Reaffirms Opposition to Kyoto, Proposes Alternatives
President George W. Bush made a major policy statement on global warming and the Kyoto Protocol on June 11, immediately before flying off to a week of meetings with European leaders. [<MORE NEWS>](#)

Misinformed missteps on warming
There are few things more dangerous than a misinformed politician seeking to enact a politically correct regulation or legislation. And there is nothing quite like presumed global warming to provoke politicians and journalists (and even some scientists) into expressing incoherent hysteria and alarm. [<MORE NEWS>](#)

Bush Decides Against Regulating CO2
President George W. Bush announced on March 13 that his administration would not seek congressional approval to regulate carbon dioxide emissions produced by electric utilities. In a letter to Senators Hagel, Craig, Helms, and Roberts, Bush said that "important new information" from an Energy Information Administration study "concluded that including caps on carbon dioxide emissions as part of a multiple emissions strategy would lead to...significantly higher electricity prices..." [<MORE NEWS>](#)

Shop smarter and faster.



\$29
Eye Exam for glasses
NORTHCROSS OPTICAL

We guarantee the lowest price in town!



WEDDING REGISTRY
FOLEY'S

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1-5. High Exposure Online Newspapers for Chapter 6

<Paper 1>

①

<http://www.casperstartribune.net/articles/2004/09/12/news/wyoming/9cbbd237d99359e787256f0d0000e02a.txt> (Yellowstone rodents show effects of global warming)³

② http://www.nunatsiaq.com/news/features/40910_01.html (Newfoundland razorbills invade murre colonies)

③ <http://athens-olympics-2004.newkerala.com/index.php?action=fullnews&id=30677> (India's water wars: Is god or man to blame)

④

<http://www.reuters.co.uk/newsArticle.jhtml?type=scienceNews&storyID=5989467§ion=news> (Global warming menaces California wine industry)

⑤ <http://www.terradaily.com/2004/040912030002.mn92kc8b.html> (After wind power, Germany turns to the sun for electricity)

⑥ <http://www.capeargus.co.za/index.php?fSectionId=55&fArticleId=2188885> (Birds face global warming disaster)

⑦ <http://www.biomedcentral.com/news/20040819/01/> (Plankton respond to warmer seas)

⑧

<http://www.nzherald.co.nz/storydisplay.cfm?storyID=3585140&thesection=news&thesubsection=world> (More summer storms point to global warming)

⑨ <http://afr.com/articles/2004/09/08/1094530686837.html> (Global warming reaches boardrooms)

⑩ <http://www.denverpost.com/Stories/0,1413,36~158~2346018,00.html> (A solution to global warming)

³ In the actual online papers, the headlines of the news stories attached to the hyperlinks here were not written out, but could be found by clicking the hyperlinks. The headlines, which are written in the parentheses in the dissertation, are provided to help readers recognize the content of the news stories.

<Paper 2>

① <http://www.sciencemag.org/cgi/content/full/305/5690/1548a> (Climate Change: Changes in planktonic food web hint at major disruptions in Atlantic)

② http://www.socialistworker.org/2004-2/512/512_03_Disasters.shtml (What we think: Natural and not-so-natural disasters)

③ http://www.theaustralian.news.com.au/common/story_page/0,5744,10662099%255E16946,00.html (Insurers raise the eco-alarm)

④ http://home.businesswire.com/portal/site/google/index.jsp?ndmViewId=news_vie_w&newsId=20040916005559&newsLang=en (California industry poised to provide world-leading technologies, jobs for cleaner, more efficient vehicles)

⑤ <http://www.sundayherald.com/44779> (Blair urged to press Bush to start war on global warming)

⑥ <http://www.commondreams.org/news2004/0819-04.htm> (New campaign fights to protect tropical reefs)

⑦ <http://www.inyoregister.com/articles/2004/08/31/news/405new02.txt> (The mild, mild west: Scientist linking dismal sierra snow packs, melting glaciers, to evidence of global warming)

⑧ http://www.greenpeace.org/international_en/features/details?item_id=583710 (Global warnings)

⑨ <http://cincinnati.bizjournals.com/cincinnati/stories/2004/09/13/daily29.html> (Cinergy plans first series of voluntary environmental programs)

⑩ <http://www.newsday.com/news/health/ny-hsclim163973202sep16,0,5260050.story?coll=ny-health-headlines> (U.S. blocking Arctic report)

<Paper 3>

① <http://www.taipeitimes.com/News/world/archives/2004/09/25/2003204281>
(Chinese glaciers could be gone in 100 years)

② <http://www.voanews.com/article.cfm?objectID=F2A49DB8-3BE2-4BED-95A5B7629041E234&title=Coral%20Genetic%20Bank%20Offers%20Hope%20for%20Restoring%20Florida's%20Reefs&catOID=45C9C787-88AD-11D4-A57200A0CC5EE46C&categoryname=Science%20%26%20Tech> (Coral genetic bank offers for restoring Florida's reefs)

③ http://www.jamaicaobserver.com/editorial/html/20040927T010000-0500_66657_OBS_RESOURCES_FOR_ODPEM_MET_OFFICE.asp
(Resources for ODPEM, Met office)

④ <http://sfgate.com/cgi-bin/article.cgi?f=/c/a/2004/09/27/BAGQM8VIN61.DTL>
(Global warming creeps up on S.F.: City has plan to cut greenhouse gases)

⑤ http://www.wgrz.com/news/news_article.aspx?storyid=23186 (PCS says state must get greener on energy)

⑥ http://news.xinhuanet.com/english/2004-08/31/content_1929270.htm
(Organization to promote environmental study)

⑦ http://rockymountainnews.com/drmn/state/article/0,1299,DRMN_21_3147148,00.html (Delicate ecosystems under assault)

⑧ <http://www.thisiscornwall.co.uk/displayNode.jsp?nodeId=144659&command=newPage&contentPK=10862717> (Scientists study risk of devastating floods)

⑨ <http://www.prnewswire.com/cgi-bin/stories.pl?ACCT=109&STORY=/www/story/09-28-2004/0002260179&EDATE=> (Roche putting the brakes on greenhouse gas emissions with hybrid car pilot study)

⑩ <http://www.voanews.com/article.cfm?objectID=180D4859-FDDE-4D6D-BB7DCF953D80C611&title=New%20Study%20Finds%20Technology%20Already%20Exists%20to%20Solve%20Global%20Warming&catOID=45C9C787-88AD-11D4-A57200A0CC5EE46C&categoryname=Science%20%26%20Tech>
(New study finds technology already exists to solve global warming)

1-6. Medium Exposure Online Newspapers for Chapter 6

<Paper 1>

①

<http://www.casperstartribune.net/articles/2004/09/12/news/wyoming/9cbbd237d99359e787256f0d0000e02a.txt> (Yellowstone rodents show effects of global warming)

② http://news.xinhuanet.com/english/2004-09/14/content_1979854.htm (El Baradei: No deadline for completion of Iraq nuclear probe)

③ <http://athens-olympics-2004.newkerala.com/index.php?action=fullnews&id=30677> (India's water wars: Is god or man to blame)

④

<http://www.reuters.co.uk/newsArticle.jhtml?type=scienceNews&storyID=5989467§ion=news> (Global warming menaces California wine industry)

⑤ <http://pakistanimes.net/2004/09/14/wire3.htm> (Oprah gives away 276 cars on TV show)

⑥ <http://www.capeargus.co.za/index.php?fSectionId=55&fArticleId=2188885> (Birds face global warming disaster)

⑦

http://www.timesdispatch.com/servlet/Satellite?pagename=RTD/MGArticle/RTD_BasicArticle&c=MGArticle&cid=1031777925900 (London becomes Cape Town)

⑧

<http://www.nzherald.co.nz/storydisplay.cfm?storyID=3585140&thesection=news&thesubsection=world> (More summer storms point to global warming)

⑨ <http://cnews.canoe.ca/CNEWS/World/2004/09/13/628171-ap.html> (U.S. deficit at record high with a month left in budget year)

⑩ <http://www.denverpost.com/Stories/0,1413,36~158~2346018,00.html> (A solution to global warming)

<Paper 2>

① <http://www.sciencemag.org/cgi/content/full/305/5690/1548a> (Climate Change: Changes in planktonic food web hint at major disruptions in Atlantic)

② http://home.businesswire.com/portal/site/google/index.jsp?ndmViewId=news_vie_w&newsId=20040916005559&newsLang=en (California industry poised to provide world-leading technologies, jobs for cleaner, more efficient vehicles)

③ http://www.thestar.com/NASApp/cs/ContentServer?pagename=thestar/Layout/Article_Type1&c=Article&cid=1095674561045&call_pageid=968256289824&col=968705899037 (Quebec trucker charged in deadly crash)

④ http://www.newsday.com/news/local/wire/ny-bc-ny_brf--policeshootin0920sep20,0,5789280.story?coll=ny_ap-regional-wire (Woman shot by police officer)

⑤ <http://economictimes.indiatimes.com/articleshow/857519.cms> (Tobacco companies to fight it out in court)

⑥ <http://www.inyoregister.com/articles/2004/08/31/news/405new02.txt> (The mild, mild west: Scientist linking dismal sierra snow packs, melting glaciers, to evidence of global warming)

⑦ http://www.newsday.com/news/health/ny-hsclim163973202sep16,0,5260050.story?coll=ny-health_headlines (U.S. blocking Arctic report)

⑧ <http://www.reuters.co.uk/newsArticle.jhtml?type=internetNews&storyID=6281153§ion=news> (UK man arrested for stealing Cisco source code)

⑨ <http://feeds.bignewsnetwork.com/?sid=80f920baa12b818c> (Oops, Britney marries again)

⑩ <http://www.star-ecentral.com/movies/buzz/buzz.asp?file=archives/buzz/2004/9/20Culkinchar&date=9/20/2004> (Culkin charged for drug possession)

<Paper 3>

① <http://www.taipeitimes.com/News/world/archives/2004/09/25/2003204281>

(Chinese glaciers could be gone in 100 years)

② http://www.cbc.ca/story/world/national/2004/09/29/plane_norway040929.html

(Axe-wielding passenger attacks Norwegian pilots)

③ http://www.jamaicaobserver.com/editorial/html/20040927T010000-0500_66657_OBS_RESOURCES_FOR_ODPEM_MET_OFFICE.asp

(Resources for ODPEM, Met office)

④ <http://www.wqad.com/Global/story.asp?S=2364147> (Wheaton police investigated theft of high school safe)

⑤ http://www.wgrz.com/news/news_article.aspx?storyid=23186 (PCS says state must get greener on energy)

⑥ http://news.xinhuanet.com/english/2004-08/31/content_1929270.htm
(Organization to promote environmental study)

⑦ <http://www.fool.com/News/mft/2004/mft04092906.htm> (Microsoft's Russian carrot)

⑧ http://www.richmond.com/sci-tech/output.cfm?ID=3275968&vertical=sci_tech
(DNA fingerprinting is not just for humans)

⑨ <http://www.prnewswire.com/cgi-bin/stories.pl?ACCT=109&STORY=/www/story/09-28-2004/0002260179&EDATE=> (Roche putting the brakes on greenhouse gas emissions with hybrid car pilot study)

⑩ http://seattletimes.nwsources.com/html/artsentertainment/2002048735_tvbriefs29.html
(Penn will be the voice of Bob Dylan memoirs)

1-7. No Exposure Online Newspapers for Chapter 6

<Paper 1>

①

<http://www.reuters.com/newsArticle.jhtml?type=politicsNews&storyID=6223864>

(Bush avoids Issue of Iran, N. Korea on Campaign Trail)

② http://news.xinhuanet.com/english/2004-09/14/content_1979854.htm (El

Baradei: No deadline for completion of Iraq nuclear probe)

③ <http://www.guardian.co.uk/russia/article/0,2763,1303957,00.html> (Putin

tightens grip on regions and MPs)

④ <http://www.koaa.com/news/view.asp?ID=2684> (Great Sand Dunes designated a national park)

⑤ <http://pakistanimes.net/2004/09/14/wire3.htm> (Oprah gives away 276 cars on TV show)

⑥

<http://www.reuters.com/newsArticle.jhtml?type=businessNews&storyID=6225544> (Sony group agrees to buy MGM)

⑦

http://www.timesdispatch.com/servlet/Satellite?pagename=RTD/MGArticle/RTD_BasicArticle&c=MGArticle&cid=1031777925900 (London becomes Cape

Town)

⑧ <http://www.guardian.co.uk/indonesia/Story/0,2763,1303833,00.html> (Police find embassy bomb clue)

⑨ <http://cnews.canoe.ca/CNEWS/World/2004/09/13/628171-ap.html> (U.S. deficit at record high with a month left in budget year)

⑩

http://seattlepi.nwsource.com/national/apmideast_story.asp?category=1107&slug=Italy%20Iraq%20Hostages (Italian foreign minister visit Kuwait)

<Paper 2>

① <http://www.voanews.com/article.cfm?objectID=A331B0E9-9E22-40B9-B2D8F5DED022BE81&title=Iraq%20Remains%20a%20Contentious%20Campaign%20Issue&catOID=45C9C78F-88AD-11D4-A57200A0CC5EE46C&categoryname=USA> (Iraq remains a contentious campaign issue)

② http://www.channelnewsasia.com/stories/afp_world_business/view/107690/1.html (France, Brazil lead charge for new global anti-poverty campaign)

③ http://www.thestar.com/NASApp/cs/ContentServer?pagename=thestar/Layout/Article_Type1&c=Article&cid=1095674561045&call_pageid=968256289824&col=968705899037 (Quebec trucker charged in deadly crash)

④ <http://www.newsday.com/news/local/wire/ny-bc-ny-brf--policeshootin0920sep20,0,5789280.story?coll=ny-ap-regional-wire> (Woman shot by police officer)

⑤ <http://economictimes.indiatimes.com/articleshow/857519.cms> (Tobacco companies to fight it out in court)

⑥ <http://www.reuters.co.uk/newsPackageArticle.jhtml?type=businessNews&storyID=587470§ion=finance> (Jaguar workers plan strike over job cuts)

⑦ <http://www.fool.com/News/mft/2004/mft04092014.htm> (Microsoft opens up)

⑧ <http://www.reuters.co.uk/newsArticle.jhtml?type=internetNews&storyID=6281153§ion=news> (UK man arrested for stealing Cisco source code)

⑨ <http://feeds.bignewsnetwork.com/?sid=80f920baa12b818c> (Oops, Britney marries again)

⑩ <http://www.star-ecentral.com/movies/buzz/buzz.asp?file=archives/buzz/2004/9/20Culkinchar&date=9/20/2004> (Culkin charged for drug possession)

<Paper 3>

① <http://www.abc.net.au/lateline/content/2004/s1209989.htm> (Blair admits Iraq intelligence flawed)

② http://www.cbc.ca/story/world/national/2004/09/29/plane_norway040929.html (Axe-wielding passenger attacks Norwegian pilots)

③ <http://sanjose.bizjournals.com/sanjose/stories/2004/09/27/daily22.html> (Gotcha! Scientists finally capture their quake)

④ <http://www.wqad.com/Global/story.asp?S=2364147> (Wheaton police investigated theft of high school safe)

⑤ <http://www.computerworld.com/hardwaretopics/hardware/story/0,10801,96247,0.html> (IBM claims supercomputer crown for U.S.)

⑥ <http://www.team4news.com/Global/story.asp?S=2364321> (ConocoPhilips gets stake in Russia's giant)

⑦ <http://www.fool.com/News/mft/2004/mft04092906.htm> (Microsoft's Russian carrot)

⑧ http://www.richmond.com/sci-tech/output.cfm?ID=3275968&vertical=sci_tech (DNA fingerprinting is not just for humans)

⑨ <http://breakingnews.iol.ie/entertainment/story.asp?j=119136088&p=yy9y36794> (Real life Rocky sues Stallone)

⑩ http://seattletimes.nwsource.com/html/artsentertainment/2002048735_tvbriefs29.html (Penn will be the voice of Bob Dylan memoirs)

APPENDIX 2 – Survey Questionnaires

2-1. First Level Agenda Setting and Need for Orientation for Chapter 4⁴

You are being asked to participate in a journalism research study.

This research study consists of two projects. Once you complete this survey, you will be asked to participate in an experimental study soon. **The extra credit, as promised, will be given to you only when you complete both the projects - survey and experiment.**

This survey is designed to take less than 15 minutes to complete.

Your answers will be **kept strictly confidential**, and will be **used only for academic purposes**. Furthermore, data from the survey will only be presented in aggregate form and your identity will not be revealed.

Your participation is entirely voluntary and you can refuse to participate without penalty.

If you have any question, please feel free to contact me (Gunho Lee) at buildsky@mail.utexas.edu (or at 471-1789) or co-investigator (Chan Yun Yoo) at yooey@mail.utexas.edu (or at 417-8161).

If you agree to participate in this study, please provide **your name** and **last 4-digits of your Social Security Number**. It is important for your extra credit.

Thanks for your participation again. I greatly appreciate your time in helping with this survey.

⁴ The same questions for the issues of drug, crime and education were asked, but not presented here to shorten the length of the survey appendix.

INSTRUCTION: Please indicate how you feel about each of the following statements by putting a mark (X) on an appropriate number, as shown in the example below.

EXAMPLE

- I like apples.

X

1-----2-----3-----4-----5-----6-----7

Strongly Disagree Strongly Agree

The above example shows that the respondent strongly disagrees with the statement "I like apples" above.

- How important is the ECONOMY issue as the problem facing this country today?

1-----2-----3-----4-----5-----6-----7

Not at all Extremely Important

Important

- How many news reports about the ECONOMY issue do you regularly pay attention to?

1-----2-----3-----4-----5-----6-----7

Never Very Often

- To what extent do you think the ECONOMY issue is deserving of additional government action?

1-----2-----3-----4-----5-----6-----7

Not at all Very Much

all

- How often do you talk about the ECONOMY issue in your everyday conversation?

1-----2-----3-----4-----5-----6-----7

Never Very Often

INSTRUCTION: Each pair of words below describes how you feel about the ECONOMY issue. For each pair, please put a mark (X) to show how you feel in general, that is, most of time.

ECONOMY issue is

Of no concern to me	1-----2-----3-----4-----5-----6-----7	Of a lot of concern to me
Irrelevant to me	1-----2-----3-----4-----5-----6-----7	Relevant to me
Doesn't matter to me	1-----2-----3-----4-----5-----6-----7	Matters to me
Insignificant to me	1-----2-----3-----4-----5-----6-----7	Significant to me
Non Essential to me	1-----2-----3-----4-----5-----6-----7	Essential to me

INSTRUCTION: Please indicate how you feel about each of the following statements by marking **X** on an appropriate number.

- For the ECONOMY issue, how much do you know about it?

1-----2-----3-----4-----5-----6-----7

I know nothing about it Omit neutral I know a lot about it

- I am confident that I know enough about the ECONOMY issue.

1-----2-----3-----4-----5-----6-----7
Strongly Disagree Disagree Neutral Agree Strongly Agree

- How familiar are you with the ECONOMY issue?

1-----2-----3-----4-----5-----6-----7

Not at
all
familiar

Somewhat
unfamiliar

Neutral

Somewhat
familiar

Extremely
familiar

- 1-----2-----3-----4-----5-----6-----7

Neutral

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2-2. Second Level Agenda Setting for Chapter 5

You are being asked to participate in a journalism research study.

This research study consists of two projects. Once you complete this survey, you will be asked to participate in an experimental study soon. **The extra credit, as promised, will be given to you only when you complete both the projects - survey and experiment.**

This survey is designed to take less than 15 minutes to complete.

Your answers will be **kept strictly confidential**, and will be **used only for academic purposes**. Furthermore, data from the survey will only be presented in aggregate form and your identity will not be revealed.

Your participation is entirely voluntary and you can refuse to participate without penalty.

If you have any question, please feel free to contact me (Gunho Lee) at buildsky@mail.utexas.edu (or at 471-1789) or co-investigator (Chan Yun Yoo) at yoocy@mail.utexas.edu (or at 417-8161).

If you agree to participate in this study, please provide **your name** and **last 4-digits of your Social Security Number**. It is important for your extra credit.

Thanks for your participation again. I greatly appreciate your time in helping with this survey.

INSTRUCTION: Please indicate how you feel about each of the following statements by putting a mark (X) on an appropriate number, as shown in the example below.

EXAMPLE

- I like apples.

X

1-----2-----3-----4-----5-----6-----7-----8-----9

Strongly Disagree Disagree Neutral Agree Strongly Agree

The above example shows that the respondent strongly disagrees with the statement "I like apples" above.

- How important is the GLOBAL WARMING issue, today?

1-----2-----3-----4-----5-----6-----7-----8-----9

Not at all Unimportant Neutral Somewhat Extremely
Important Important Important

- How many news reports about the GLOBAL WARMING issue do you regularly pay attention to?

1-----2-----3-----4-----5-----6-----7-----8-----9

Never Neutral Very
Often

- To what extent do you think the GLOBAL WARMING issue is deserving of additional government action?

1-----2-----3-----4-----5-----6-----7-----8-----9

Not at all Neutral Very
Much

- How often do you talk about the GLOBAL WARMING issue in your everyday conversation?

1-----2-----3-----4-----5-----6-----7-----8-----9

Never Neutral Very
Often

INSTRUCTION: Each pair of words below describes how you feel about the GLOBAL WARMING issue. For each pair, please put a mark (X) to show how you feel in general, that is, most of time.

GLOBAL WARMING issue is

Of no concern to me	1-----2-----3-----4-----5-----6-----7-----8-----9	Of a lot of concern to me
Irrelevant to me	1-----2-----3-----4-----5-----6-----7-----8-----9	Relevant to me
Doesn't matter to me	1-----2-----3-----4-----5-----6-----7-----8-----9	Matters to me
Insignificant to me	1-----2-----3-----4-----5-----6-----7-----8-----9	Significant to me
Non Essential to me	1-----2-----3-----4-----5-----6-----7-----8-----9	Essential to me

INSTRUCTION: Suppose that you have a friend from Mars. He or she has no knowledge about the planet Earth. Consequently, he or she does not know anything about global warming. **What would you tell your friend about global warming?** Please write down as much as possible.

INSTRUCTION: Please indicate how you feel about each of the following statements by marking **X** on an appropriate number.

- **For the GLOBAL WARMING issue, how much do you know about it?**

1-----2-----3-----4-----5-----6-----7-----8-----9		
I know nothing about it	Omit neutral	I know a lot about it

- **I am confident that I know enough about the GLOBAL WARMING issue.**

1-----2-----3-----4-----5-----6-----7-----8-----9				
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

- 1-----2-----3-----4-----5-----6-----7-----8-----9
- Not at Somewhat Neutral Somewhat Extremely
all unfamiliar familiar familiar
familiar

- 1-----2-----3-----4-----5-----6-----7-----8-----9
- One of the least knowledgeable Persons Neutral One of the Most knowledgeable Persons

- I believe that global warming will do harm to the environment of the Earth.

- I believe that we have to reduce the effects of global warming at the expense of the economy.

- 1-----2-----3-----4-----5-----6-----7-----8-----9
Strongly Disagree Disagree Neutral Agree Strongly Agree

2-3. Priming Aspect of the Agenda Setting Effects for Chapter 6

You are being asked to participate in a research study conducted by a doctoral candidate in the School of Journalism at the University of Texas at Austin.

This research study consists of two projects. Once you complete this survey, you will be asked to participate in a series of experimental study soon.

This survey, the first project, is designed to take less than 15 minutes to complete.

Your answers will be **kept strictly confidential**, and will be **used only for academic purposes**. Furthermore, data from the survey will only be presented in aggregate form and your identity will not be revealed.

Your participation is entirely voluntary and you can refuse to participate without penalty.

If you have any question, please feel free to contact me (Gunho Lee) at buildsky@mail.utexas.edu (or at 236-8043).

If you agree to participate in this study, please provide **your name** and **last 4-digits of your Social Security Number**. It may be used for tracking the data.

Thanks for your participation again. I greatly appreciate your time in helping with this survey.

INSTRUCTION: Please indicate how you feel about each of the following statements by putting a number in the parenthesis, as shown in the example below.

EXAMPLE

- I like apples. (1)

1-----2-----3-----4-----5-----6-----7-----8-----9
Strongly Disagree Disagree Neutral Agree Strongly Agree

The above example shows that the respondent strongly disagrees with the statement “I like apples” above.

- How important is the Global Warming issue, today? ()

1-----2-----3-----4-----5-----6-----7-----8-----9

Not at all Unimportant Neutral Somewhat Extremely
Important Important Important Important Important

- How many news reports about the Global Warming issue do you regularly pay attention to? ()

1-----2-----3-----4-----5-----6-----7-----8-----9

NeverVery
Often

- To what extent do you think the GLOBAL WARMING issue is deserving of additional government action? ()

1-----2-----3-----4-----5-----6-----7-----8-----9

Not at Very
all Much

- How often do you talk about the Global Warming issue in your everyday conversation? ()

1-----2-----3-----4-----5-----6-----7-----8-----9

NeverVery
Often

INSTRUCTION: Each pair of words below describes how you feel about the Global Warming issue. For each pair, please put a number in the parenthesis (inside the corresponding box) to show how you feel in general, that is, most of time.

Global Warming issue is

Of no concern to me	()	1-----2-----3-----4-----5-----6-----7-----8-----9	Of a lot of concern to me
Irrelevant to me	()	1-----2-----3-----4-----5-----6-----7-----8-----9	Relevant to me
Doesn't matter to me	()	1-----2-----3-----4-----5-----6-----7-----8-----9	Matters to me
Insignificant to me	()	1-----2-----3-----4-----5-----6-----7-----8-----9	Significant to me
Non Essential to me	()	1-----2-----3-----4-----5-----6-----7-----8-----9	Essential to me

INSTRUCTION: Suppose that you have a friend from Mars. He or she has no knowledge about the planet Earth. Consequently, he or she does not know anything about **ATKIN'S DIET**. What would you tell your friend about Global Warming? Please write it down in a paragraph (two or three sentences).

INSTRUCTION: Please indicate how you feel about each of the following statements by putting a number in the parenthesis.

- For the Global Warming issue, how much do you know about it? ()

1-----2-----3-----4-----5-----6-----7-----8-----9	
I know nothing about it	I know a lot about it

- I am confident that I know enough about the Global Warming issue.
()

1-----2-----3-----4-----5-----6-----7-----8-----9
Strongly Disagree Strongly Agree

- How familiar are you with the Global Warming issue? ()

1-----2-----3-----4-----5-----6-----7-----8-----9
Not at all familiar Extremely familiar

- How would you rate your knowledge about the Global Warming issue relative to the rest of the population? ()

1-----2-----3-----4-----5-----6-----7-----8-----9
One of the most knowledgeable Persons One of the least knowledgeable Persons

INSTRUCTION: Please indicate how you feel about each of the following statements by putting a number in the parenthesis.

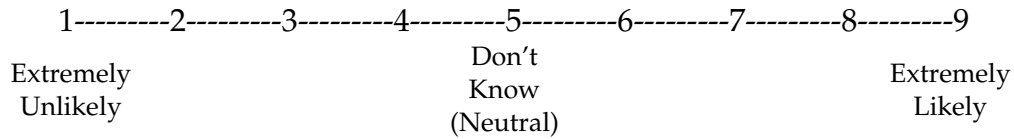
- How likely is it for the species to be extinct as a consequence of the Global Warming? ()

1-----2-----3-----4-----5-----6-----7-----8-----9
Extremely Unlikely Don't Know (Neutral) Extremely Likely

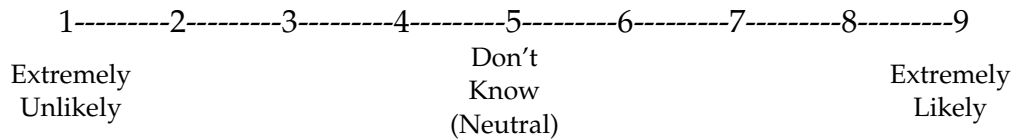
- How likely is it for the flooding to happen as a consequence of the Global Warming? ()

1-----2-----3-----4-----5-----6-----7-----8-----9
Extremely Unlikely Don't Know (Neutral) Extremely Likely

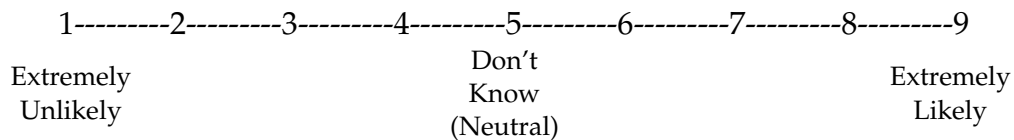
- How likely is it for the tax for preserving the environment to be increased as a consequence of the efforts to reduce the Global Warming effects? ()



- How likely is it for the industrial business to be damaged as a consequence of the efforts to reduce the Global Warming effects? ()



- How likely is it for the regional conflict (international and/or provincial) to happen as a consequence of the efforts to reduce the Global Warming effects? ()



INSTRUCTION: Regarding the global warming issue, which do you think is most important among the ecosystem, flood, industrial business, energy policy and regional conflict? Please put the rank in the parentheses (From 1 [most important] to 5 [least important])

- Ecosystem ()
- Flood ()
- Industrial business ()
- Energy policy ()
- Regional conflict ()

INSTRUCTION: Please indicate how you feel about each of the following statements by putting a number in the parenthesis.

- **Do you support or oppose the efforts to reduce the Global Warming effects? ()**

1-----2-----3-----4-----5-----6-----7-----8-----9
Extremely
Oppose
Extremely
Support

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